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On the Staphyloma, Hydrophthalmia, and Carcinoma of the Eye.

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ALTHOUGH it be too often the melancholy province of medical men to witness disorders which cannot be removed, and in the treatment of which the utmost exertions of their art can only produce a mitigation of the symptoms, surgery nevertheless, besides affording in this way considerable benefit to mankind, is often highly serviceable in various diseases, by preventing the occurrence of greater evils than those which have already taken place. This observation is strikingly exemplified in those disorders of the eye to which the attention of the Society is now requested; for though all of them have irrecoverably destroyed vision, yet the staphyloma and hydrophthalmia indispensably require an operation that shall cause the eye to sink in the orbit, in order to obviate constant pain and uneasiness; and the carcinoma of the eye is only capable of receiving a check, in its tendency to destroy life, by the complete extirpation of that organ.

The term staphyloma is sometimes used to designate the protrusion of a part of the iris through a wound or ulcer of the

cornea. This is perhaps its most correct meaning, the Greek word, from which it is derived, implying similitude to a raisin or dried grape. But various authors have also used the term to denote a projecting opake cornea; and in this sense I propose more particularly to employ it at this time. When the projection is very considerable, the disorder is sometimes also called proptosis; and in those cases where the projection is not confined to the cornea, but occupies also a portion of the sclerotica, as sometimes happens, this latter appellation is peculiarly appropriate.

It has been disputed by authors whether the projection of the opake cornea, in the staphyloma, is occasioned by a thickening of this tunic, or by a morbid accumulation of aqueous humor behind it. I believe, in general, both these circumstances combine to produce the disorder; the cornea becoming not only opake, but both softer and thicker than in its natural texture; and, in consequence of this, the aqueous humor behind the cornea pushes it forward, and thus enlarges the anterior chamber of this humor. I have sometimes seen the whole cornea sloughed off during an acute purulent ophthalmy, and a white opake substance gradually effused from the ulcerated surface, sufficient to form a complete cover to the iris; after which this opake body has gradually projected in a conical shape, until at length it has become so prominent as to hinder the eyelids from closing over it. I have at other times seen the projecting cornea partly opake, and partly transparent; the pupil being distinctly visible through the transparent part, but the power of vision wholly destroyed. Sometimes the circumference of the opake cornea projects, its central part appearing depressed, and resembling the bottom of a plate or dish; and sometimes, near to the center of the opacity, in the case last mentioned, there is an irregular black appearance, which a cursory observer might mistake for a pupil. No part of this aperture, however, is perceptible on a careful inspection, and the eye of course is deprived of all useful vision.*

* The cornea not unfrequently projects without losing its transparency, assuming a conical shape instead of that which is spherical; in consequence of which change the eye at first becomes myopic; but when the projection is more advanced, it causes so unequal a refraction in the rays of light as to

So long as the projection of the opake cornea can be covered by the eyelids without painfully stretching them, if it be not accompanied with an irregularity in the surface of the cornea, and the sight of the other eye continue perfect, the only inconvenience the projection occasions is produced by the unseemly appearance it presents to observers. This may in some degree be prevented by wearing a pair of spectacles containing plain window glass in the ring opposite the sound eye, and glass that is ground in a slight degree opake, or even similar plain window glass, in the ring opposite the affected eye. In some instances, however, a consciousness of the appearance produced by a projecting opake cornea has occasioned so much distress of mind, that I have been requested to sink the eye, solely for the purpose of getting rid of the deformity. I wish I could say that milder means have been found sufficient to accomplish the object. Various applications have been proposed for this purpose at different times by different authors. By some, strong caustics have been recommended for the express purpose of producing an excoriation, and even an ulceration, on the surface of the projecting substance. Both *Janin and †Richter have said they not only removed the projection of an opake cornea, but even reproduced its transparency, by the application of the butter of

destroy correct vision. In cases of this description I have repeatedly discharged the aqueous humor, and endeavoured afterwards, by moderate pressure, to prevent the return of the projection; but on the reproduction of the aqueous humor the conical projection has always reappeared. If only one eye be thus affected, the sight of the other remaining perfect, all the purposes of vision will be obtained from this alone; but, if the cornea of both eyes be conical, much advantage may be obtained from wearing spectacles, the rings of which are filled with an opaque substance that has a small hole in its center, not more than the tenth or twelfth part of an inch in diameter, the smallness of which aperture, by lessening the pencils of the rays of light, will prevent the confusion that must otherwise be occasioned by their unequal refraction. Persons who have a projecting cornea should be particularly careful to avoid blows on the eye; since the projection is usually accompanied with a preternatural thinness of this tunic, which renders it easily ruptured: when this happens, the iris is liable to be involved in the wound, and the sight to be more or less injured by the derangement that takes place in the figure and size of the pupil.

* Janin sur l'œil, sect. 8, page 389 et sequent.

† Richter, fasciculus 2, page 105 et sequent.

antimony. Janin has recommended this application, for the purpose also of removing that other spceies of the staphyloma, in which there is a protrusion of part of the iris through an ulcer of the cornea. But I beg leave to observe that caustic applications of every kind should be used with great caution in all diseases of the eye. I have known them occasion violent and long continued inflammations; and, so far from reproducing vision, they have very rarely reduced the prominence of the staphyloma so as to preclude the need of other means to take away the deformity. Scarpa, in his chapter on the staphyloma, expresses himself in a similar way; and has adduced several cases of this disorder in children, in whom an ulceration on the surface of the cornea was kept up by escharotic applications several weeks, and yet no diminution was obtained by it, either in the projection or opacity. If such be the result of the experiment on the eyes of children, it certainly is less likely to succeed on those of adults. The other mode which has been proposed by authors, viz. that of compressing the tumor, and thus restraining it from interfering with the motion of the eyelids, is so difficult to be accomplished, with the necessary accuracy, that I remember only one case in which it afforded any advantage. In this instance a poor man who had a staphyloma of one eye many years, and could not be prevailed on to submit to have the eye sunk, was kept easy by wearing a bandage round his head, not unlike to the spring truss that is used for an inguinal hernia. The bolster of the instrument made a pressure on the outside of the eyelids, which kept them constantly closed, and hindered the eye from moving. In consequence of this, the projection gave no pain; and, by the aid of the other eye, the patient was enabled to work at a common handicraft business without inconvenience.

The more direct way of affording relief in the staphyloma is by removing the whole of the projecting substance; in consequence of which the humors of the eye are discharged, and the posterior part of its tunics collapse, so as to form a kind of button at the bottom of the orbit. On this button, when the wound is healed, an artificial enamelled eye is capable of resting; by which the uniform appearance of the face may be restored. Authors are not agreed on the best mode of perform-

ing the operation. Heister, St. Yves, and others, have proposed to pass a double ligature through the middle of the tumor, and then to separate the threads, and tie the tumor on each side, so that the compression made by the ligature may cause it to mortify and slough off. But this is so painful, and so indirect a mode of accomplishing the object, that I believe it has not been practised for many years. Scarpa, in more modern times, has recommended to us to remove a small portion only of the projecting cornea (agreeable to a mode first proposed by Celsus in his book de medicina, lib. vii, cap. 7.*), and to force out the crystalline and vitreous humors through the opening; after which, he says, the wound will close, and the tunics of the eye collapse to a small size, without occasioning any considerable degree either of pain or inflammation. This mode of performing the operation appears to me, however, to be liable to considerable objections. If the opening in the cornea be not larger than the size of the crystalline humor (which not unfrequently, in cases of the staphyloma, is without disease), this humor, in passing through the aperture, is very liable to bruise the iris, and to bring on pain and inflammation, that are both violent and tedious; and if, on the contrary, the opening be so large as to allow the crystalline and vitreous humors to be discharged, without doing violence to the iris, though the pain and inflammation, consequent on the operation, may not be considerable, yet the place of the evacuated humors will be supplied by a watery humor, which will speedily distend the tunics of the eye to their former size, will do away the possibility of inserting an artificial eye, and will hazard the return of all the old symptoms. Scarpa, aware of these circumstances, mentions expressly, that he has been obliged to irritate the wound three or four different times, after the operation, in order to bring on a sufficient degree of inflammation to cause the eye to collapse. Influenced by these considera-

* The words of Celsus are, "in summa parte ejus ad lenticulæ magnitudinem exscindere." Scarpa proposes to make an opening "two, three, or four lines in diameter, according to the size of the "staphyloma;" but the largest of these dimensions being only one third of an inch, is barely sufficient to allow the crystalline to come through it, without forcibly compressing the iris.

tions, I have never performed the operation according to this method; and having uniformly succeeded in a considerable number of cases, during a practice of more than thirty years, by performing it in the following manner, I trust that I am justified in recommending my mode of operating to the attention of this Society.

The operator will find it more convenient to stand behind the patient than before him; and the patient should be placed on a chair sufficiently low to allow the operator to carry his hand with ease over the patient's head. A large crooked needle, armed with a strong thread, should then be passed through the opake projecting cornea, and, after separating the needle from the thread, a knot should be tied in the latter, at a small distance from the eye, in order to hinder the thread from slipping. The operator having thus obtained by means of the thread a secure hold of the eye, a knife similar to that which is used to divide the cornea in extracting the cataract, or, if this be not at hand, a long sharp-pointed lancet, should be pushed through the sclerotic coat, about a quarter of an inch from its connexion with the cornea, and be carried quickly but accurately round the cornea, as nearly parallel to it as can be accomplished. Sometimes, as soon as a puncture is made through the sclerotica, so large a portion of the vitreous humor escapes, as to cause the cornea to become flaccid; in consequence of which the operator may find it difficult to complete the incision round this tunic with either the lancet or the knife: and in this case a curved blunt-pointed scissars will be found useful to finish the operation. The only objection to the use of the scissars is drawn from the additional pain which it is supposed to give; but the duration of the operation is so short, that the difference between the pain produced by the instruments is scarcely worthy to be named. The hemorrhage that succeeds is seldom considerable; and the less the eye is examined afterwards, the less danger will there be of pain and inflammation. A compress wet with a saturnine lotion should be applied over the eye, and it should be moistened with this liquor, without being removed, as often as it becomes dry; but no lint or any other application should be put within the lids, since this has been known to give great pain, and in one in-

stance to occasion alarming symptoms. An anodyne should be given after the operation, of greater or less strength according to the age of the patient; but it is seldom necessary to repeat this medicine, since the patient has usually more sound and quiet sleep after the operation than he had for a long time previous to its performance. At the end of about a fortnight that part of the sclerotica which remained in the orbit will be found to have collapsed, and sometimes a small fungous substance will then protrude through the wound. This in the course of time would subside of itself, but, as the delay may be irksome, the fungus may be easily removed, and with very little pain, by snipping it off with a pair of sharp scissars. The fungus is usually smaller in its neck where it joins the sclerotica than in its top; in consequence of which its removal is effected with very little difficulty; and though it sometimes reappears, it may be snipped off, again and again, until at length the wound will completely close, the inflammation cease, and the orbit become fit to receive an artificial eye. This, however, ought not to be introduced until the inflammation be perfectly removed; and when such an eye is used, it is advisable to withdraw it every night and replace it in the morning, which may be effected with ease by the patient himself, after a short experience. In the choice of the artificial eye, it is not only important that the color of the iris resemble accurately that of the sound eye, but the size of the eye should be well adapted to that of the orbit, and the dimensions of the cornea be rather smaller than that of the natural eye. If these rules be not regarded, the artificial eye will give an unsightly stare to the countenance; it will not move, as it ought to do, in unison with the sound eye; and it will be liable to occasion both pain and inflammation. It is of consequence also to know that an artificial eye is apt to irritate after it has been used about a year and a half or two years, and must then be either disused entirely, or its place be supplied by a new one: and it may not be improper to remark, that when an eye has been sunk, if an artificial eye be not introduced, the appearance of the countenance may be much improved by wearing a pair of spectacles with either plain window glass in the circles, or glass that is tinged in a slight manner with a green or blue color. The

reflection from the glass in the spectacle frame will prevent the deficiency from being noticed, or will only give rise to the supposition of the eye being weak.

I next proceed to consider the disorder called Hydrophthalmia. By this term authors do not in general mean an accumulation merely of the aqueous humor, but so great an enlargement of the whole eye, produced by an increase of the vitreous humor as well as the aqueous, as to cause the eye to occupy an undue portion of the orbit, and to occasion difficulty and pain when the eyelids are closed over it. Thus defined, it may perhaps with more propriety be denominated Exophthalmia than Hydrophthalmia.* In describing this disorder a greater discrimination is required than seemed necessary in the former part of this paper. In the staphyloma, for instance, the opake projecting cornea designates the nature of the disorder in so plain a manner, that it seems impossible to make a mistake with regard to its nature. But in the hydrophthalmia, which implies an universal enlargement of the eye, some examination is requisite in order to ascertain what occasions the enlargement; whether there be an equal enlargement of all the different parts of the eye; a morbid enlargement of one particular part only; the formation of an adventitious body within the eye; or a projection of the eye in consequence of a substance formed behind it.

Infants are sometimes born with eyes remarkably large and prominent. But if they do not give pain by their pressure, nor interfere with the free motion of the eyelids, and if at the same

* Scarpa is of opinion that an accumulation of water between the choroid coat and retina is a common cause of the hydrophthalmia, and he minutely describes a case of this kind which occurred in a child three years and a half old, in which the eye was a third larger than its natural size, the cornea partaking of the increase, in the same proportion as the sclerotica. I have several times observed, on dissecting the eye after death, that there has been an effused fluid between the choroid coat and retina, the vitreous humor being wholly absorbed, and the retina collapsed into a cylindrical, or rather a conical, chord-like substance, its apex arising from the optic nerve, and its basis surrounding the crystalline humor; but, though this effusion had produced a fixed dilatation of the pupil, an opacity of the crystalline, and sometimes a violent deep seated pain in the eye, I have never known it to occasion an enlargement of this organ.

time the cornea be transparent and the sight perfect, the mere circumstance of their prominence does not call for any particular attention. Sometimes, however, the eyes of infants, at the time of their birth, are not only remarkably prominent, but the cornea of one or both is universally opake, without any accompanying inflammation in the conjunctiva, or any morbid discharge from the eyes. Of this I have seen several instances, three of which happened in one family. These were more directly under the care of Mr. Farrer, a surgeon, resident at that time at Deptford. He has described them with accuracy in the second volume of Medical Communications, page 463, published in London in 1790. The opacity gradually diminished; and in less than a year, in two of them, it was quite removed. In the third the cornea did not resume its transparency until the end of the second year. The amendment in these instances cannot be attributed to any particular remedies, since none were used; but it was owing to the *vis naturæ medicatrix*, which in infants, in this disorder, as it also is in many others, is often effectual to restore a healthy state. Mr. Farrer does not mention any particular prominence in the eyes of these children; but, having seen two of them shortly after the time when Mr. Farrer drew up the account of the cases, I find, by a minute I then made, that the cornea appeared to me remarkably prominent; and that, though the children had recovered a distinct vision, they were all short-sighted.—Another case of a similar kind came under my notice about three years ago, in the new born infant of a respectable farmer in Essex. Both corneæ were completely opake, and both were large and prominent. In this instance, as in those last mentioned, no applications were used with sufficient steadiness to allow me to attribute any considerable degree of efficacy to them; notwithstanding which, when, about four months ago, the child was again brought to me, I had the satisfaction to see the left cornea sufficiently clear to allow the perception of all large objects; the opacity of the right cornea being also diminished round its outer edge, though the greatest part of the pupil was still obscured. I was consulted in a fifth case of the same kind about a year ago. It occurred in the infant of a gentleman in Portman Square. Here, as in the other in-

stances, the corneæ of both eyes, at the time of birth, were large and prominent, and they were at the same time completely opake; the child, in other respects, being healthy, and suffering no pain from the state of the eyes. Sanctioned by the successful issue of the preceding cases, no particular remedies were employed; and at the time of my writing this paragraph, which is just a year from the birth of the child, the cornea of one eye is not only perfectly transparent for a considerable space round its circumference, but the pupil can be seen through the diminished opacity that remains in its center; and though the cornea of the other eye has improved less in its appearance, the transparency of this also is evidently increased, and the iris is visible through it, for the space of a line at least round its rim.

In all these instances, the enlargement of the eye was not sufficient to be of serious consequence independent of the opacity of the cornea; and, when this opacity was dissipated, the power of vision was restored. But when, on the contrary, the enlargement is not confined to the cornea, but extends to the sclerotica, and is so considerable that the eyelids cannot be closed without difficulty, the patient being not only blind, but unable to sleep without the aid of opiates; the prospect of restoring sight is wholly lost, and the only question is, in what way ease may be obtained, and deformity obviated. It does not appear possible to do more than this; nor can even this be accomplished by any other mode than that of diminishing the size of the eye: and the best manner of doing it I believe to be by means of the operation, which has been recommended above in cases of the staphyloma.

Before an operation of so much importance be performed, it is, however, essentially requisite to ascertain that the disease consists solely in an enlargement of the different parts of the eye; and that it is not produced by the formation of purulent matter within the eye; by a morbid alteration in the structure of either its coats or humors; nor by the undue accumulation of adeps, or of any other substance, behind this organ.

When purulent matter is accumulated within the eye, the inflammation and pain, which both precede and accompany the enlargement, seem fully sufficient to distinguish the pecu-

liar nature of the disorder; and they at the same time point out the necessity of procuring an adequate aperture in the tunics of the eye, through which the matter may be discharged. In a case of this kind, which I was desired to see at a small distance from London, in which a young lady, nine years of age, had suffered agonizing pain several days, the sight of the eye having been lost many years, and the cornea being both opake and prominent, an aperture had taken place spontaneously on the side of the eye next the temple, just in that part where the cornea is joined to the sclerotica, and through it a small portion of matter had escaped; but the tension of the eye continued, and the wound was only large enough to admit the blunt end of a probe. The propriety of enlarging the aperture naturally suggested itself; and as the eye had not been useful for a long time as an organ of vision, a small blunt-pointed bistoury was immediately introduced through the wound, to the depth of at least a quarter of an inch, and the incision was carried three quarters of an inch in a direction towards the temple, dividing at the same time the sclerotica choroides and retina, and making a large opening into the body of the vitreous humor. No part of this humor, however, nor any sort of fluid, issued through the wound at the time of the operation. The eyelids were immediately closed, without any pressure being made on the eye, and directions were given to apply an anodyne fomentation, in the same way in which it had been frequently before used. An anodyne draught was intended to be given, but within half an hour the patient fell into a sound sleep, which lasted several hours. She awoke much refreshed and perfectly easy. The wound discharged more or less of matter for a fortnight; the pain did not return; and the eye gradually diminished, so that in a short time it did not appear to be more than one half of its natural size.

Purulent matter is sometimes also formed behind the eye in the adipose substance that supports this organ in the orbit. If the suppuration be quick in its progress, and be not situated deep, the fluctuation of the matter may be easily felt, and the propriety of discharging it be determined at once; but if, as I have occasionally found, the suppuration be slow, and the matter lie considerably below the surface, the eye will be protru-

ded before any fluctuation can be discovered; and the existence of the matter will only be learned by paying attention to the accompanying symptoms, such as a quick pulse, white tongue, shiverings, &c. In a case of this kind, which occurred in a child six years old, which was attended also by Mr. Hill in Bedford Row, I passed a lancet, on the side of the eye next the nose, a little below the commissure of the eyelids, at least an inch into the orbit, before I reached the matter. On withdrawing the instrument its point was evidently marked with pus. I therefore enlarged the aperture with a blunt-pointed bistoury, and discharged a considerable quantity, which was thick and putrid. It was necessary to preserve the opening by the insertion of a small dossil of lint; on the removal of which, a vent was given daily to new matter, for a fortnight. Its quantity gradually decreased, together with the prominence of the eye; and at length it wholly ceased, the wound healed, and the child became well. The motion of the affected eye, however, was not quite free toward the nose for several months afterwards.

Encysted tumors are sometimes also found in the adipose substance that supports the eye. A melancholy instance of this kind came under my notice a short time ago. The tumor was first perceived between the orbital process of the os frontis and the globe of the eye, and it gradually increased in size. An attempt had been made to extirpate it; but the greater part was situated so deep, that it was not possible wholly to remove it; and, after a short period, it reappeared, and in a few months completely pushed the eye out of the orbit; after which vision was destroyed, and the eye and the tumor became so blended, as to render it impossible to distinguish one from the other. The united mass increased continually in size, until, before the child's death, it was literally larger than his head.* Another case of this kind came under my care, about the same time, in a girl about five years of age, who was a patient of Mr. Drew in Gower Street. The tumor had been perceived

* I presume that this may be considered a case of fungus hæmatodes; though it originated in an encysted tumor situated between the bony orbit and globe of the eye, and did not affect the sight until the eye was thrust out of the orbit.

several months, and, when I first saw it, projected under the upper and outer edge of the orbit, and began to push the eye out of its place. In this instance I made an incision through the eyelid, parallel to the edge of the orbit, sufficiently deep to expose the whole of the fore part of the cyst. I then separated the cyst from the orbit, and, embracing it with a hook, drew it forward, and, dissecting it from all its attachments, brought it away entire. The sides of the wound were afterwards kept together by the use of adhesive plaster, and the cure completed in a few days.

In some instances, again, a projection of the eye appears to be occasioned solely by a morbid accumulation of the substance on which the eye rests in the orbit. The repeated application of leeches, on the temple and forehead, has been found of great use in subduing this morbid tendency. In one case, that came under my own care, the projection was speedily diminished by opening the temporal artery; and, after the hemorrhage had ceased, by converting the orifice into an issue, the discharge from which became soon very considerable. In another case, in which the protrusion occasioned great pain, and nearly destroyed vision, a perfect cure was accomplished by the application of a large caustic behind the ear. The discharge which it ccasioned, when the eschar separated, was profuse; and it was kept up, nearly a month, by the insertion of a dozen peas daily.

Another disorder of the eye, which gradually occasions its enlargement, has by some been called fungus hæmatodes; and by others medullary sarcoma, spongoid inflammation, and soft cancer. This differs so much, both in progress and appearance, from the hydrophthalmia, that it cannot easily be mistaken for it. It more nearly resembles the disorder which I propose to consider last in this paper, the Carcinoma of the eye, having many symptoms in common with it. The fungus hæmatodes seldom attacks the eyes of adults, and is most commonly discovered at an early period of an infant's life. The first symptom that is noticed is a white shining substance in the posterior part of the eye, visible through the pupil in some particular positions of the head, but not in all. One eye is generally attacked some time before it appears in the other. As soon as the whiteness

is perceived in the eye, the sight is impaired, and, in a short time, it is wholly lost. At its commencement it bears a slight resemblance to a cataract; but an attentive person will at once discover the difference between the two disorders; the opacity in the cataract lying close behind the pupil, whilst in the fungus hæmatodes it is situated deep in the posterior part of the eye. In the cataract, the pupil retains the power of dilating and contracting in different degrees of light; but in the fungus hæmatodes the pupil never varies its size, and is usually dilated. When the disorder has so much advanced as to destroy the figure of the eye, and to make it protrude beyond the rim of the orbit, it is more difficult to distinguish it from what has usually been called a carcinoma of this organ. There is still greater difficulty, when, after extracting an eye that contains a fungus hæmatodes, a fresh tumor arises from the bottom of the orbit, which fills this cavity, and continues increasing, until it becomes, as has sometimes happened, as large as the whole head. This difficulty of distinguishing between the carcinoma of the eye and the fungus hæmatodes is however, the less to be regretted, since the proper treatment of both disorders seems nearly alike; the only known mode of checking the progress, in both, appearing to be the complete extirpation of every part that is diseased. Before recourse be had to the operation, it is necessary to ascertain, as far as possible, that every such part is capable of being removed; since, in both disorders, if the smallest portion that has been contaminated remain, whether it join the organ that is extirpated, or be at a distance from it, the diseased part will infallibly increase, and all the old symptoms be reproduced. The fungus hæmatodes is not always confined to one eye, nor even to both, but sometimes occupies a large portion of the orbit exterior to the tunics of the eye. It is also accompanied not unfrequently with abscesses and tumors in different parts of the head; sometimes between the pericranium and cranium; and at other times between the pericranium and dura mater. These abscesses are not confined to the fore part of the head, having sometimes been found both on the outside and inside of the os occipitis. Distinct portions of matter, and sometimes hard tumors, have also been formed in the dura mater, and even in the substance of the cerebrum; and sometimes under the an-

terior lobes of the cerebrum, making a compression on the thalami nervorum opticorum. A disease of this kind is by no means new. It has occasionally come under my notice ever since I was a boy, and it has been described by many of our ancestors under the common name of carcinoma or cancer. It may be more correct, however, to distinguish it by the term fungus hæmatodes, or medullary sarcoma, though it does not appear to me to be always easy to ascertain the difference between the two disorders. It has been said that carcinomatous affections are always preceded by a hard circumscribed tumor, and that, after an ulceration has been produced, if it be followed by a fungous excrescence, this is of a cauliflower figure, and a hard firm texture; but such cannot be admitted to be the universal progress of these affections, nor is it unlike to that which the fungus hæmatodes sometimes assumes. It may be said with greater correctness that the carcinoma of the eye is a disease to which persons are most subject in the middle or latter part of their lives, whereas the fungus hæmatodes appears in early life, and most commonly in infancy.

The following is the progress of a disorder which I have also repeatedly seen in persons advanced in life, but do not remember in any who were young. By some it may be called fungus hæmatodes, and by others carcinoma, but I shall content myself with describing it. The sight is lost before any change takes place in the appearance of the eye: after this the pupil becomes dilated without any visible opacity in the crystalline humor. This description designates a gutta serena; but the disorder does not stop here. After a little time the crystalline humor becomes opake; and soon afterwards shooting pains are experienced, which dart suddenly through the eye in different directions, rarely continuing long at one time. At this period, if the sclerotica be carefully examined, a bluish, or rather a dusky leaden colored, spot, of greater or smaller extent, will be discovered in it, on one side of the cornea, and sometimes on both. These bluish or leaden colored spots gradually spread; the eye enlarges either partially or generally; and in a short time it pushes forwards the eyelids, and fills the whole of the orbit. In some instances the bluish enlargements appear as if they were affections of the outer surface of the

sclerotica, and only covered by the tunica conjunctiva. In others they are evidently produced by a distention of the whole substance of the sclerotica, which is pushed out and thinned, where the projection appears by the accumulation of a morbid substance within the eye. A few of the bloodvessels of the conjunctiva are usually enlarged, and have a purplish red appearance, very different from that which is produced by a common inflammation. On examining the internal state of these tumors, after their extirpation, the whole of the eye has been found full of the leaden colored substance I have described; divided, in an irregular manner, by membranous laminæ into separate cells, the contents of which have varied much, even in the same eye, in their degrees of consistence. They are usually firm and solid, but sometimes contain pus in separate cysts, and sometimes also osseous particles that differ much in their shape and size. These tumors are in general produced by an irregular enlargement of the whole eye, involving both its coats and humors; but sometimes the humors are very little altered, the disease seeming to originate in an affection of the tunica sclerotica, which spreads outwards rather than inwards. Sometimes the tumor is confined to one side of the eye, its other side being unaffected. At other times it occupies both sides; and, occasionally, there have been three tumors annexed to the eye, one on each side and one above, all as large as the eye; this organ being unaltered in size, though deprived of sight.

The progress which the disorder makes is very various. Sometimes a prominence of a leaden color has continued in the substance of the sclerotica, on one side of the cornea, many years, without giving pain or occasioning any sort of trouble; and, on the contrary, it has at other times increased rapidly, and the enlarged organ in a few months has completely filled the orbit.* It does not appear that medicines or

* Since these papers were put together I have extirpated an enlarged eye from a gentleman, thirty years of age, who had lost the sight of it many years; but it occasioned no pain or inconvenience until about six months ago, when it began to enlarge, and an increase in its size had afterwards been perceived almost every week. The enlargement of the eye was universal; the bloodvessels had a purplish red appearance; there were three bluish

applications have the power of checking or controlling this malignant disorder; and whenever its nature can be clearly ascertained, the only question is, whether it be possible to extirpate completely every part that partakes of the poison. Although it be a melancholy truth that the operation has too often failed, this does not lead to the conclusion that its performance is always improper, since it certainly has not unfrequently succeeded; and I have the satisfaction to say, though I have sometimes failed, I have several times performed it with complete success.

With regard to the mode of performing the operation, I would advise it to be done in the following manner.

The patient should be seated in a clear light, on a chair of a suitable height to bring his eye on a level with the breast of the operator; and the operator should either sit or stand before him, as is most easy to himself. The patient's head should rest against the breast of an assistant, whose left hand should support the upper eyelid by means of a double blunt-pointed hook, the points of which are seven eighths of an inch distant from each other, and his right hand should be at liberty to do any thing that may be desired by the operator. The hands of the patient should be held by two assistants that sit, one on each side, and an assistant should be ready to give the operator instruments, sponges, &c. A crooked needle armed with a strong thread, and well waxed, should then be passed through the whole of the cornea; after which, the needle being cut off, a knot should be tied in the thread, at the distance of about an inch from the eye, to hinder it from slipping. This thread is more useful in cases where the eye is so much enlarged as

spots on the sclerotica, one of which was as large as a sixpence; and the pressure of the eye against the eyelid kept up a constant uneasiness. In a consultation with Mr. Cline, it was judged advisable, as the increase of the tumor was rapid, to recommend the extirpation of it without delay; and the patient giving his consent, I performed the operation, in the presence of Mr. Cline, a few days after the consultation. Nothing unusual occurred at the time; and on examining the tumor afterwards, the humors of the eye were found to be no otherwise affected than by their enlargement, the blue appearances being occasioned solely by an affection of the sclerotica. No accident happened after the operation, and, in less than a month, the wound was healed, and the patient returned, perfectly well, to his home in Kent.

nearly to fill the orbit, than when it is smaller; the finger alone, in the former case, being insufficient to incline the tumor from one side to the other, so as to make the room that is required for the proper use of the knife. If the tumor be considerable, the upper and lower eyelids should next be separated, by dividing with the knife the integuments which unite them on the side next the temple. This will give much additional room for the introduction of the knife to dissect the diseased organ from its attachments. The conjunctiva should then be divided round the whole globe of the eye; and afterwards the knife be carried downwards, on that side where it passes with the greatest ease. It is not possible to give precise directions, as to the mode in which the dissection should be conducted; but great care should be taken to avoid wounding the tumor until the point of the instrument has reached the bottom of the orbit. If it be possible, the operator should introduce his finger with the knife so as to feel the optic nerve, which, together with the muscles of the eye, should be divided as close to the foramen opticum as the instrument can be carried. In general the common straight scalpel may be so directed as to perform this part of the operation with accuracy; but if the tumor completely fill the orbit, it may be useful, in this part of the operation, to substitute for the straight scalpel one that is a little curved. As soon as the optic nerve and muscles of the eye have been divided, the tumor becomes loose, and may be easily drawn out of the orbit, either by the fingers, or by the ligature that was passed through the cornea at the beginning of the operation. The tumor, when removed, should be carefully examined, in order to ascertain if it be entire, or if it be wounded in any part. In the latter case, the orbit should be carefully examined, both with the eye and the finger; and if any portion of the tumor be seen or felt, it should be dissected away. The state of the nerve should also be examined. If this appear white, and of its natural size, a hope may be entertained that the operation will prove successful; but if it appear of a leaden color, or be altered in shape or size, there is too much reason to fear that the disease has passed beyond the part which has been removed, and that, sooner or later, a fungus will arise in the orbit, and all the old symptoms be repro-

duced. The hemorrhage consequent on the operation is seldom considerable. The arteries that supply the eye with blood are not large; and if a little time be allowed, those that are wounded will contract of themselves. It is desirable to avoid the application of lint or of any other substance within the lids, since it sometimes has given considerable pain; and, in one instance, in which the operation was performed by an eminent surgeon, it was supposed to occasion violent convulsions by its pressure against the divided end of the nerve. It is sufficient to apply over the eyelids a compress of old linen, folded six or eight times, and moistened with the liquor plumbi acetatis dilutus; and to direct the compress to be remoistened, without removing it, as often as it becomes dry. If by accident the eyelid be wounded during the operation, care should be taken to bring the divided ends together, and to confine them in their natural position either by means of sticking plaster, or of a suture with a small needle and thread. Care should also be taken, before the compress be applied, to adjust the edges of the upper and lower eyelids, so as to hinder one from lopping over the other. If, after the operation, the pain continue violent, an anodyne should be given; and, if necessary, it should be repeated after three or four hours; but its repetition, I believe, will seldom be required. Sometimes, after a week or ten days, the upper eyelid is observed to tuck in under the lower; in consequence of which the upper lashes, by rubbing against the inside of the lower lid, have been known to keep up a painful irritation. This may be obviated by fixing the end of a slip of adhesive plaster on the upper lid, and continuing it lengthways on the forehead, sufficiently tight to make a fold in the skin and hinder the edge of the lid from turning inwards. Cooling medicines, and a spare diet, are necessary for a few days; but afterwards a light preparation of cinchona, together with a nutritious diet, will be required. As the wound heals, an adhesion usually takes place between the inside of the eyelid and the bottom of the orbit; and when this happens, it is not possible to give the patient the benefit of an artificial eye, as is done after the operation for the staphyloma or the hydrophthalmia; and he must be contented either to wear a compress, bound by a riband over the orbit, or a pair of spec-

tacles, having plain glass in the ring before the good eye, and glass that is either plain, or in a slight degree opake, in that before the affected eye.

If, unfortunately, after a careful extirpation of a carcinomatous eye, a tumor again arise in the orbit, it is vain to expect benefit from a second operation, and applications of a painful kind should be avoided as much as possible. Art does not appear to be capable of doing more than to palliate the violent symptoms; by anodyne remedies; by evacuations local or general; and by tonic medicines, when the state of the general health renders these expedient.

May 28, 1810.

ON STRAMONIUM.

[From the Medical and Physical Journal for July, 1811.]

HAVING recorded the effects of the internal administration of stramonium upon the human system in health and in disease, I shall conclude with some observations upon the practice of smoking the herb, of late recommended for the cure of asthma, and other pulmonic affections.

Since the first part of this paper was written, Dr. Sims, whose attention to botanical research, amidst the engagements of extensive practice, is highly creditable, has, in a letter to the editor of the Monthly Magazine, given the following account of the introduction of smoking stramonium in this country.

" Some time in the year 1802 I received from general Gent a remedy that he had not long before brought from Madras, which, the general informed me, was used there as a specific for relieving the paroxysms of asthma, and that it was prepared from the roots of the wild purple-flowered thorn-apple, *datura ferox*. The roots had been cut into slips as soon as gathered, dried in the shade, and then beat into fibres resembling coarse hemp. The mode of using it was by smoking it in a pipe at the time of the paroxysm, either by itself or mixed with tobacco, according as the patients were previously addicted to smoking or not. General Gent procured this remedy from Dr. Ander-

son, physician general at Madras, who both recommended it, and, I believe, used it himself.

"I happened at this time," continues Dr. Sims, "to be attending the daughter of an eminent physician, labouring under phthisis pulmonalis, combined with asthma, as appeared to me from the frequent paroxysms of difficulty of breathing, not usual in pure phthisis, at least in so early a stage of the disorder. With a view of alleviating these distressing paroxysms, I recommended a trial of this remedy, which to me was at that time perfectly new. The relief obtained was far beyond expectation; and, although gradually sinking under an incurable disease, this amiable lady continued to experience great satisfaction from its use, almost to the fatal termination."

Soon afterwards Dr. Sims recommended this remedy to Mr. Toulmin of Hackney, who had for several years suffered frequent paroxysms of asthma. He received much benefit from its use, and having soon exhausted the original stock given him by Dr. Sims, at the doctor's suggestion, he had recourse to the common thorn-apple, (*datura stramonium.*) From this he experienced nearly the same relief as from the East Indian plant. Mr. Toulmin communicated the knowledge of the remedy to the correspondent in the Monthly Magazine with the signature of Verax.*

Dr. Sims concludes his letter by observing that he has two purposes to answer by it. "In the first place it will serve to point out the history of the introduction of a remedy which promises to become an important addition to the Materia Medica," and it will prove "that the original remedy, as used in the East Indies, is not exactly the same as what is used here. It is, indeed, highly probable that both species have nearly similar virtues, but the one may, perhaps, be more efficacious than the other."

This account of the remedy is certainly favourable, and from Dr. Sims's authority many practitioners will, probably, be induced to give it a trial. We must not forget, however, that the doctor has only cited two cases in which benefit has been derived from its use, evidence is still wanting to enable us to de-

* This writer has since avowed himself to be John Sills, esq. Guildford Street.

cide upon the merits of the plant, to determine in what cases its use may be profitable, and in what cases it may be hurtful.

The following lamentable history of the fate of a gentleman,* who was instrumental in introducing the practice of smoking stramonium, is probably not known by many who are industriously encouraging the use of this composing smoke.

Dr. Gibbes of Bath being called in to attend this gentleman, found him sitting up with his head reclined on a sofa in a state of stupor. His recollection was impaired, and he seemed stunned and comatose. His pulse was scarcely to be felt, and there was no great force in the carotid artery. Upon inquiring into his case, Dr. G. found that on the preceding evening the gentleman had been very much affected with shortness of breath, and that he had smoked stramonium, the effect of which was, that his breath became perfectly easy, but at the same time he had shown symptoms of stupor. He went to bed, passed a quiet night, and arose the next morning in the heavy comatose state in which Dr. Gibbes found him on his arrival at the house. A large blister was applied to the back, purgative medicines were administered; and the urine being deficient in quantity, a draught with squills and camphor mixture was ordered.

On the second day the blister had acted, the bowels had been open, and the urine in proper quantity and of a clear good color. The mental faculties were somewhat recovered. The treatment was continued, and he was directed to take nourishment, having previously reduced himself very much with the view of alleviating the distress in his breathing. On the third day his recollection was much better, his pulse perceptible and some return of shortness of breath had occurred. From this symptom Dr. Gibbes drew a favourable opinion, as he observed that as this came on, the mental faculties seemed to improve; nor could he perceive any fulness of vessels to denote apoplexy; nor any evidence of effusion since the urine had returned to its natural quantity and color. On the fourth day he was so much reco-

* The particulars of this case were communicated to Dr. Bree by Dr. Gibbes. Delicacy to the parties alone prevents the patient's name from appearing, but the authenticity of the account may be relied upon; and the opinion of Dr. G. that smoking stramonium was the cause of death is confirmed by the testimony of Dr. Parry.

vered that he was preparing to go to Clifton; but suddenly expired after dinner, either whilst sleeping, or immediately upon awaking: Dr. Parry, who was then sent for, as being nearer than the attending physician, finding him dead when he arrived.

The patient was of a full habit, and about twelve months previous to this attack, had been affected with a cough and wheezing, from which he recovered under the care of Dr. Gibbes with ordinary expectorants. At the commencement of his last illness he smoked largely of stramonium, three or four times, without consulting any one; when the serious symptoms above related supervened, and Dr. Gibbes was called in.

My own experience of the effects of this remedy has not been encouraging; I have given it in asthma, in chronic cough attended with severe dyspnœa, and copious expectoration; and in phthisis pulmonalis. Some of the patients, whose complaints were far advanced, died, as they must have done had they not taken the medicine, which however, I did not think hastened the catastrophe. In two or three instances of dyspnœa, slight and temporary benefit was obtained, but in no one instance was the disorder materially altered in character, and the patients soon abandoned a remedy from which they derived no relief. Desirous that the properties of stramonium should be properly estimated, and to prevent any suspicion that my judgment might be influenced by my own want of success, I applied for information to some of my medical friends, whom I knew were especially conversant in the disorders in which this remedy has been said to prove beneficial. Dr. Bree, with great liberality and promptitude, has allowed me to publish the following letter containing the result of his observation on the effects of smoking stramonium in asthmatical complaints.

DEAR SIR, *May* 10, 1811.

I very willingly comply with your request that I should report the result of my observations on the efficacy or influence of stramonium in cases of asthma that have fallen under my view.

In certain cases I tried the extract of stramonium many years ago, but I was not encouraged by my experience at that time to pursue the practice of giving it in general cases of asthma.

In the last year the public were informed, by writers in journals and newspapers, that the smoking of this herb produced ease, and even effected cures in convulsive asthma. The authorities for such success were of a mixed character, some of them being satisfactory, as far as they reported benefit in the fits of asthma; but others, more numerous, were very suspicious, as they were not sanctioned by names, and most of them asserted *cures* after the use of the remedy for a very short time in this disease, of which the access of the paroxysm is both periodical and uncertain.

The evidence of advantage from smoking stramonium had a doubtful aspect to a considerate physician, and this character was not rendered more clear by the appearance of a "Familiar Treatise" on the subject, pretended to be published by Mr. Surgeon Fisher. Much of the matter in that treatise I knew to be wholly false, whilst the chief object of it was clearly displayed by the recommendation of stramonium in a *secret* composition, after the manner of other empirical nostrums.

Mr. Toulmin of Hackney gave the only testimony that deserved attention respecting the use of stramonium in asthma; but this gentleman, with the power of confuting the pretensions of others, did not offer himself to the public notice; and the same reserve, which distinguishes the professional man of science, seems to have restrained him from publishing hasty conclusions from particular facts, that are too often generalized and made subservient to unworthy purposes. I was acquainted, in a private manner, with Mr. Toulmin's use of stramonium by inhaling it, and the success which some sufferers had experienced in fits of asthma from following his practice, induced me to mention it as a possible means of obtaining relief, when other antispasmodics had been tried without effect.

From the beginning of the present year I have been more attentive to the effects of this practice.

The number of cases which I have had occasion to examine between that period, and the end of April, was 82. The patients were all disturbed in their breathing, but only a proportion of them was truly affected with convulsive asthma. To the whole number the remedy had been either useless, as regarded the removal of the disease, or it had produced injurious or fatal ef-

fects. If any signal advantage from the use of stramonium had been experienced, I should probably not have been consulted, and my report is therefore not intended to deny the success that may be asserted to have taken place in cases I have not seen. You will consider it as a faithful report respecting 82 cases of patients who had smoked this herb under various diseases, which were supposed to be asthmatic.

Those who had smoked stramonium without any permanent good effect amounted to 58. The remaining 24 had all of them been more or less injured, and some of them destroyed by the practice. I shall only mention cases which were brought to a certain state, admitting of safe inferences as to their further progress, at the end of April. They had been all of them observed with sufficient attention to enable me to ascertain, how far stramonium was capable of mitigating or removing asthma.

The first list of 58 included 11 cases of obstructed liver; these patients had lost their time in relying upon stramonium; but I do not place this inconvenience amongst the injuries derived from the practice of smoking this herb, because the constitutions of the patients were yet so vigorous, as to be capable of bearing the necessary evacuations. All of them had constant dyspnœa, and most of them had experienced paroxysms of convulsive breathing at intervals. Three were in an advanced state of the disease, having hard bellies, and swelled legs. Seven gradually recovered by the treatment that was applied for the removal of congestion in the liver, their dyspnœa leaving them, as the disease of this organ gave way. These 11 cases show the effect of advice which people, ignorant of the distinction of diseases, give with confidence to their friends without any authority excepting that of the advertisements of their newspapers.

The remainder of the 58 patients had the usual signs of the asthmatic constitution. They were generally satisfied with a plan, less miraculous in the promise of immediate cure, but more likely to restore tone to their habits, and with the assurance that relieving the convulsive paroxysm of asthma is not removing the disease. I had seen many of them before, and some of these did not refrain from complaining of the assent I had given in the winter to their trials of stramonium in the difficulty they experienced of appeasing the fit.

The 24 patients who have been stated to have suffered injury from the smoking of stramonium were all disordered in their breathing, and their dyspnœa, at intervals, assumed the form of convulsive asthma.

Of this number I shall first mention seven patients, whose symptoms indicated phthisis, and whose lungs were weak, and had been long subject to inflammatory attacks on changes of weather, and the taking of colds. The oldest of these was 35 years of age. Their habits were thin, irritable, and weak, and the pulses of all of them in their best state of a dangerous quickness. In their former attacks of difficult respiration, small bleedings, with blisters and febrifuge draughts, that gently promoted expectoration, had always afforded relief. They came under my care in March and April, and all without exception, attributed the aggravation of their complaints to the smoking of stramonium, or to the use internally of an oxymel of stramonium. Some of these patients were relieved by the same means, as had been before repeatedly applied to their cases, but three of them spat blood, after violent heat and stricture under the sternum had continued for many days. They now expectorate pus, and are greatly wasted with hectic fever and night sweats, and give no prospect of a fortunate result from any mode of treatment.

Three persons, who had passed the meridian of life, and had suffered asthmatic affections, and coughs, for many years, with great debility and emaciation of the system, experienced paralytic tremblings from smoking stramonium. Their original complaints were also generally aggravated, excepting their cough, which subsided as their weakness increased. The pulse in each of these patients was so lowered, that it became difficult to feel the beating of the artery. After abandoning their practice of smoking, which two of them had pursued every evening for two weeks, and one twice a day, for ten days; they took strengthening draughts with gentle expectorants. The cough then returned to each patient, and they all recovered their former degree of health.

A lady advanced in life, of weak constitution, and particularly feeble nerves, had been long subject to coughs and asthma. She had smoked the stramonium a few times only, and it affected her head with pain and confusion, and her stomach with sickness. She was next seized with an epileptic fit, the first she

had ever experienced. This attack was followed by three more fits of the same kind, at intervals of a few hours, and she became nearly insensible. The cough left her, the pulse became scarcely perceptible, and her mind was no longer capable of any exertion. She was not wholly unconscious of her state, but stupor and somnolency overpowered the little energy she possessed, and her stools and urine passed involuntarily. At first it appeared necessary to remove congestion from the head by cupping, leeches, and blisters. Strengthening medicines were then employed in consultation with Dr. Latham. The patient slowly recovered from this critical state, and attributed her epileptic fits, and preceding confusion of head, to the smoking of stramonium.

Four persons, all of full habits, and two of them, strictly speaking, apoplectic in their forms, smoked stramonium for the cure of dyspnœa, which they called asthma. After some days experience of this practice, one of them was still capable of coughing, but with so much pain of his head, as to indicate immediate danger. He was sixty years of age, the other three were more than fifty. They so convincingly required depletion, that I was surprised it had not been advised by the most superficial of their friends. Evacuations by bleeding and purging, removed the difficulty of breathing, and probably preserved the lives of more than one.

The smoking of stramonium has been practised by many female patients. I saw two patients, of the ages of forty-five and forty-nine, of very plethoric habits, and each of them had experienced the inconvenience which so often follows the cessation of the menses. They wheezed much, and their breathing was oppressed upon every motion of their bodies. Without taking any measure pointed out by the actual condition of their habits, and from being informed only that they had asthma, they adopted the practice of smoking stramonium, and became rapidly worse. Pneumonic inflammation affected one, and intolerable head-aches with dimness of sight attacked the other. They however obtained relief by the active application of the necessary treatment.

An elderly man, whose complicated disorders had began with obstructed liver three years before, was icteric, and ana-

sarcous, with a hard belly, and irregular pulse, and had not lain horizontally for several weeks. His respiration was laborious, and he could not leave his bed without much increased agitation. I had seen him once two weeks before; and I was called to him again in the present state. I found that he had been smoking stramonium for the last two days, and he died the night after I saw him without taking medicine.

Instances of patients in hydrothorax who had applied to the fumes of stramonium, must have occurred very often to practitioners in this town during the last three months. I have seen six cases of this kind, and I am confident that at least half of them were so quieted by the practice, the force of the circulation through the lungs was so reduced, and the irritability of the frame so far exhausted, that they died prematurely as regarded the state of the disease.

The patients who suffer injurious or fatal consequences from smoking stramonium, are chiefly those who have apoplectic or paralytic habits; young persons, affected with insidious spasmodic breathing, but who are actually consumptive; and elderly persons whose protracted complaints had ended in hydropic effusion in the chest. The effects of stramonium must be referred, as Cullen has remarked, to its narcotic power; and if it be considered how universally the practice of smoking this herb has been diffused by the exertions of selfish interest, or of ignorant enthusiasm, the mischief that health and life have suffered from its use may be conceived, but cannot be very readily estimated.

I have had reported to me many deaths from smoking stramonium, and I have verified many facts of this kind, without attending to doubtful effects in cases that might have been lost without its influence. I do not go into these cases, but have spoken only of what I have seen.

I am, dear sir, with great esteem, your most faithful

R. BREE.

Dr. Gooch, of Croydon, has kindly communicated the following cases, in three of which smoking the stramonium appears to have effected present relief.

Mr. L. 22 years old, for the last four years has had a violent difficulty of breathing, attended by wheezing and cough, which attack him suddenly when in bed, or at meals, disables him from business, and sometimes continues more than a week. It occasionally seizes him so violently that he his unable to speak, and appears to be threatened with instant suffocation. He has had much medical advice without receiving material benefit. He now smoked the thorn-apple, swallowing the saliva and smoke; by these means the fit terminates in a few minutes. He smokes every day, even when the fit does not occur. Sometimes it attacks him whilst dining in company, in which case, he retires, smokes a pipe-full, and returns to his friends breathing freely.

Mr. I. a short, fat, puffy man, about thirty-six years old, has been subject to a difficulty of breathing for twenty years. It comes on suddenly, sometimes after any strong exercise, and sometimes whilst in bed, continues several hours or days, and not unfrequently with a degree of severity that disables him from business. He has used various remedies by the advice of various practitioners, with little or no relief. For the last few months he has smoked the stem of the thorn-apple, which generally removes the difficulty of breathing within half an hour, without producing giddiness or any other unpleasant effect.

A young gentleman, about fifteen years old, came to my house to day, Sunday, March 3d, breathing with great difficulty. He has been subject to asthma as long as he can remember, and formerly scarcely passed a month without having a fit, which lasted him from two or three days to a week. For the last two years he has been free from the complaint, until about a fortnight ago, when he had a fit which continued about a day. Half an hour ago he was seized with another, which was severe. I made him sit down and smoke a pipe full of stramonium; he soon began to breath with greater freedom, and in about half an hour walked home quite well. He had never in his life been relieved so soon.

The complaint recurred in about a month with its former violence, and was again removed by smoking the stramonium.

A poor boy, about fifteen years old, has been subject to asthma for the last eight years. He is seldom free from it longer

than a fortnight. It almost always attacks him in the night, waking him with cough and wheezing, which generally last four or five days. It is sometimes produced by going into a barn, from the fine dust which is raised by threshing corn. When I first saw him he was wheezing and breathing with much difficulty. The next morning he procured some stramonium, smoked a pipe full, and remained free from complaint for several days. His mother was doubtful whether the relief was to be attributed to the remedy, as the difficulty of breathing was diminishing before it was used.

A few days afterwards, he awoke about four o'clock in the morning with violent cough and wheezing. He said that "his father got up, struck a light, and brought up stairs a pipe full of the herb; he sat up in bed and smoked it. As the spittle and smoke went down it cleared his stomach, and he laid down and slept quietly till seven o'clock, when he awoke quite well." Smoking always makes him giddy.

I saw him about a week afterwards; he had had another attack this morning and smoked a pipe full, but with less relief than before. In the evening of the same day I met him accidentally, breathing with much labour. He tried a pipe when he arrived home, but without any benefit. He has tried it several times since without any relief.

Comparing this evidence of impartial medical characters, interested in upholding the dignity of their profession, and zealous in extending its utility, with the statements of cases by patients, and individuals only *commercially* interested in the sale of the remedy, we cannot hesitate in deciding against the practice of smoking stramonium in the more severe and urgent forms of asthma, and phthisical complaints. It is not attempted to deny that relief has in some instances followed its use, but the preceding facts prove that relief to be trifling indeed, when balanced with the mischief which has been effected. Ranking the herb, as we must do, amongst the narcotic poisons, we might, *à priori*, suppose that its essential qualities being copiously applied in the diffusible form of smoke to a very large surface minutely supplied with nerves, the paroxysms of a convulsive cough might be quieted, but at the same time, fatal injury might be induced on the sensorium. That this is the case is

fearfully demonstrated by the somnolency, epilepsy, mania, and apoplexy, which have been evidently occasioned by the remedy. Again, it is proved by experiments that respiration is influenced by the brain, and ceases altogether when the functions of that organ are destroyed. Now if stramonium does not always disturb or destroy these vital and essential functions, it is only when it is not applied in sufficient quantity, when the quality is impaired, or from some peculiar idiosyncrasy of the patient.

The limits of this paper necessarily forbid a minute inquiry into the various causes of asthma; but the most narrow experience suffices to inform us, that unless these are removed, the disease will recur, however its symptoms may for a time be palliated. Asthma frequently depends upon effusion of serum or mucus in the cavities of the chest, and of the pericardium, in the bronchial tubes and air cells; upon the mal-formation of the chest; upon a diseased state of lungs; upon plethora occasioning pressure and thus impeding respiration; upon extraneous substances interrupting the natural action of the lungs, &c. all of which are most clearly and scientifically investigated and described in Dr. Bree's well known treatise on the subject. When any of these causes operate, can we rationally hope to obtain relief by destroying a series of actions induced in the system, to remove such noxious and offending agents?

Some people indeed are so tenacious of life that they seem to survive the effects of any sort of practice: in some habits nature is so indulgent, that they will recover although the treatment pursued is directly opposite to that which is dictated by reason or sanctioned by experience. Thus in fevers of a similar form and type, we see some patients recover, who have sustained the diffusible stimuli of John Brown; and others the large bleeding and drastic purgatives recommended by certain practitioners, even in the most advanced stage of the disorder.

Let then those worthy gentlemen who, from motives of mistaken humanity, have published their cases, and circulated their boasted cures throughout the empire, be cautious how they persevere in the practice which they so fearlessly recommend. If learned and skilful professional men are slow to admit dubious and dangerous remedies into their practice, surely those who have no pretensions to medical knowledge should

be on their guard, not to deceive themselves, by imagining that because they have escaped with impunity, they may at all times be so favoured, or that their friends may be equally fortunate.

Experiments to prove that Fluids pass directly from the Stomach to the Circulation of the Blood, and from thence into the Cells of the Spleen, the Gall Bladder, and Urinary Bladder, without going through the Thoracic Duct.

BY EVERARD HOME, ESQ. F.R.S.

[From the Philosophical Transactions for 1811, Part I.]

HAVING on a former occasion laid before the society some experiments, to prove that fluids pass directly from the cardiac portion of the stomach, so as to arrive at the circulation of the blood without going through the thoracic duct, the only known channel by which liquids can arrive there; the present experiments are brought to confirm that opinion: but in stating them, I wish to correct an error I was led into, in believing that the spleen was the channel by which they are conveyed. At the time I made my former communications, I was conscious that the facts I had ascertained were only sufficient to open a new field of inquiry; but as I might never be able to make a further progress in an investigation beset with so many difficulties, I thought it right to put them on record. Since that time I have lost no opportunity of devising new experiments to elucidate this subject; and the circumstance of Mr. Brodie, the assistant of my philosophical as well as professional labours, having tied the thoracic duct in some experiments which will come before the society, suggested to me the idea, that if the thoracic duct was tied and proper experiments made, there could be no difficulty in ascertaining whether there was any other channel between the stomach and the circulation of the blood. With this view I instituted the following experiment, which was made on the 29th of September 1810; by Mr. Brodie, assisted by Mr. William Brande and Mr. Gatcombe. I was unavoidably prevented from being present during the time of the experiment.

Experiment 1. A ligature was passed round the thoracic duct of a rabbit, just before it enters at the junction between the left jugular and subclavian veins: an ounce of strong infusion of rhubarb was then injected into the stomach. In three quarters of an hour some urine was voided, in which rhubarb was distinctly detected by the addition of potash. An hour and a quarter after the injection of the rhubarb the animal was killed: a drachm and a half of urine was found in the bladder highly tinged with rhubarb, and the usual alteration of color took place on the addition of potash. The coats of the thoracic duct had given way opposite the middle dorsal vertebra, and nearly an ounce of chyle was found effused into the cavity of the thorax, beside a considerable quantity in the cellular membrane of the posterior mediastinum. Above the ruptured part the thoracic duct was entire, much distended with chyle; and on tracing it upwards, the termination of the duct in the vein was found to be completely secured by the ligature. The lacteal and lymphatic vessels had given way in several parts of the abdomen, and chyle and lymph were extravasated underneath the peritoneum. In this and the following experiments, the infusion of rhubarb was employed in preference to the prussiate of potash, in consequence of its having been found in those I formerly made, that one drop of tincture of rhubarb could be detected in half an ounce of serum, and nothing less than a quarter of a grain of prussiate of potash in the same quantity could be made to strike a blue color when the test was added.

Experiment 2. The experiment was repeated upon a dog. In this I was assisted by Mr. Brodie, Mr. William Brande, and Mr. Clift and Mr. Gatcombe. After the thoracic duct had been secured, two ounces of a strong infusion of rhubarb were injected into the stomach, and in an hour the dog was killed. The urine in the bladder, on the addition of potash became deeply tinged with rhubarb. The bile in the gall bladder, by a similar test, was found to contain rhubarb. The lacteal vessels in several parts of the mesentery had burst, and chyle was extravasated into the cellular membrane,—the thoracic duct had given way in the lower part of the posterior mediastinum, and chyle extravasated. Above the ruptured

part, the thoracic duct was much distended with chyle,—it was readily traced to the ligature, by which it was completely secured.

These experiments appeared to establish the fact, that the thoracic duct was not the channel through which the infusion of rhubarb was conveyed to the circulation of the blood, and now it became easy to ascertain, whether it passed through the spleen by extirpating that organ, and repeating the last experiment.

On the 21st of October, 1810, the following experiment was made, with the assistance of Mr. Brodie, Mr. Clift, Mr. Gatcombe and Mr. Money.

Experiment 3. The thoracic duct near its termination was secured in a dog whose spleen had been removed four days before, and three ounces of infusion of rhubarb were injected into the stomach. In an hour and a half the dog was killed, and the urine was found strongly impregnated with rhubarb,—and on examination the thoracic duct was found completely secured by the ligature. Several of the lacteals had burst, but the duct itself had not given way,—it was greatly distended with chyle and lymph.

By this experiment it was completely ascertained that the spleen is not the channel through which the infusion of rhubarb is conveyed into the circulation of the blood, as I had been led to believe, and therefore the rhubarb, in my former experiments detected in the spleen, must have been deposited there in the same manner as in the urine and in the bile.

The detection of this error, made me more anxious to avoid being misled respecting the thoracic duct,—and therefore, although there was little probability that the infusion of rhubarb could have passed into the lymphatic vessels, which open into the bloodvessels of the right side of the neck, I thought it right, before I proceeded further, to repeat the experiment, securing the termination of the thoracic duct on the left side, and the lymphatic trunk on the right side, where it empties itself into the angle between the jugular and subclavian vein. This was done on the 28th of October, 1810, with the assistance of the same persons as in the last experiment.

Experiment 4. The thoracic duct of a dog was tied, as in

the former experiment; in doing it the duct was wounded, and about a drachm of chyle flowed out; the lymphatic trunk of the right side was then secured. After this, three ounces of infusion of rhubarb were injected into the stomach, and in an hour the dog was killed. The urine and the bile were found distinctly impregnated with rhubarb. On opening the thorax, some absorbent vessels, distended with lymph, were seen on the right side of the spine, entering an absorbent gland on the second dorsal vertebra, and the vasa efferentia from the gland were seen uniting with other absorbent vessels, and extending towards the right shoulder, where they formed a common trunk with the absorbents from the neck and axilla; this trunk was found included in the ligature. The thoracic duct was moderately distended with a mixture of chyle and lymph; in tracing it upwards, an opening was seen in it immediately below the ligature, through which the contents readily passed out when pressure was made on the duct; above this opening the duct was completely secured by the ligature. Nearly a drachm of the fluid contained in the thoracic duct was collected and tested by potash, but there did not appear to be any impregnation of rhubarb.

Experiment 5. The last experiment was repeated on another dog, on the 21st of January, 1811, with the assistance of Mr. Brodie, Mr. W. Brande, Mr. Clift, and Mr. Gatcombe. The dog was killed an hour after the thoracic and lymphatic trunk had been secured, and the infusion of rhubarb had been injected into the stomach.

In tying the right lymphatic trunk, a lymphatic vessel, from the thorax going to join it, was wounded, from which chyle flowed out in considerable quantity during the whole time of the experiment; a short time before the dog was killed, some of it was collected, but on testing it with potash no rhubarb was detected in it.

The urine was found impregnated with rhubarb as was also the bile from the gall bladder; but both in a less degree than in the last experiment. The lacteal vessels and mesenteric glands were much distended with chyle, and on cutting into the glands chyle flowed out in considerable quantity. Some of this was collected and tested with potash, but shewed no evi-

dence of rhubarb being contained in it. The thoracic duct was much distended; it was traced to the ligature, and was found to be completely secured. Lymphatic vessels from the right side of the posterior mediastinum were seen extending towards the ligature that had been tied on that side; they were nearly empty; and the trunk formed by the junction of these with the lymphatic vessels from the right axilla, and from the right side of the neck was seen distinctly included in the ligature.

While Mr. Brodie was tracing the thoracic duct, Mr. William Brande was making an infusion of the spleen, and showed me a section of it, in which the cells were larger, and more distinct, than I had ever seen them in a dog. There was a slight tinge of rhubarb in the infusion from the spleen. A similar infusion was made of the liver; but the quantity of blood contained in it being much greater than in the spleen, the appearance was not sufficiently distinct to decide whether it contained rhubarb or not. These experiments appear completely to establish the fact, that the rhubarb did not pass through the thoracic duct, and therefore must have got into the circulation of the blood by some other channel. They likewise completely overturn the opinion I had adopted, of the spleen being the medium by which the rhubarb had been conveyed, and show that the spleen answers some other purpose in the animal economy.

The rhubarb found in the spleen does not arrive there before it enters the circulation; it is therefore most probably afterwards deposited in the cells in the form of a secretion. That the rhubarb goes into the circulation is proved by my former experiments, in which it was detected in the splenic vein. The prussiate of potash is hardly to be discovered in the blood of a living animal, since the proportion which strikes a blue color on the addition of solution of iron, is greater than the circulating fluids can be expected to contain at any one time, as it goes off by the secretions nearly as fast as it is received into the bloodvessels. In a moderately sized ass, more than two drachms must be dissolved in the blood before its presence there can be detected.

That the fluid contained in the cells of the spleen is secreted there, is rendered highly probable, since it is most abun-

dant while the digestive organs are employed, and scarcely at all met with when the animal has been sometime without food. The great objection to this opinion is, there being no excretory duct but the lymphatic vessels of the spleen; these, however, are both larger and more numerous than in any other organ; they are found in the ass to form one common trunk, which opens into a large gland on the side of the thoracic duct, just above the receptaculum chyli; and when the quicksilver is made to pass through the branches of this gland, there is a trunk equally large on the opposite side, which makes an angle, and then terminates in the thoracic duct. This fact I ascertained at the Veterinary college, assisted by the deputy professor Mr. Sewell, and Mr. Clift.

These lymphatic vessels are equally as large as the excretory ducts of any other glands, and therefore sufficient to carry off the secretion formed in the cells of the spleen; and where a secretion is to be carried into the thoracic duct, it would be a deviation from the general economy, were any but lymphatic vessels employed for that purpose. It is a strong circumstance in favour of the secretion being so conveyed, that, in the last experiment, the lacteals and cells of the spleen were unusally turgid, being placed under similar circumstances, the thoracic duct being so full as not to receive their contents. The purposes that are answered by such a secretion from the spleen into the thoracic duct cannot at present be ascertained.

On Gouty Concretions; or Chalk Stones.

BY JAMES MOORE, ESQ.

SURGEON TO THE SECOND REGIMENT OF LIFE GUARDS.

[From the Medico-Chirurgical Transactions, Vol. I.]

THERE has certainly been no disease more carefully investigated than the gout. Physicians, therefore, instead of being reproached on account of this malady, deserve praise for their labours. Yet no exertions of man can command success. But there are some symptoms with which the gouty are afflicted,

the management of which belong exclusively to surgeons. Physicians are seldom competent to enter minutely into the treatment of those tumors and ulcers which are occasioned by chalk stones; and this subject has been unaccountably neglected by surgeons, in whose province they lie. It is for this reason that I have selected it. Not, however, with the pretence of fully supplying the deficiency; but with hopes that by exciting the attention of the members of this Society to these complaints, some plan of treating them may be established; instead of their being left, as at present, to each individual, to act as his sagacity, or caprice prompts him.

The concretions which form in gouty habits are usually called chalk-stones: I shall continue to employ this term, although it is now ascertained, that they are never of a calcareous nature, but are usually composed principally of the lithic acid. The analysis of these substances I leave, however, to the professed chemists, and the theory of their formation, as well as that of gout, to speculative physicians; my intention is to give such a description as is requisite for the practical surgeon; and to point out the treatment that appears to correspond with the various circumstances.

In persons afflicted with the gout, it sometimes happens that a white liquid is effused by the exhaling arteries into internal cavities. By degrees the watery and serous particles are absorbed, leaving a substance which is at first soft and clayey, and afterwards becomes hard and friable.

This effusion occurs not only during fits of gout, but likewise in the intervals; and as the extremities, particularly the hands and feet, are the principal seat of gout, it is there, that the greatest accumulations of chalk take place. Though this process is usually preceded and accompanied by inflammation, the chalk is never inclosed in a cyst, like pus in an abscess. It lies usually in the cellular membrane in the bursæ mucosæ, or in the cavities of joints: I have even seen it thrown out between the cutis and the cuticle. But as the gouty inflammation is of the erythematous kind, there is no extravasation of coagulable lymph and no new formed covering surrounding the chalk. This point is of the first importance, and explains many of the peculiarities of gout, which is generally considered as a

phlegmon. But the absence of coagulable lymph in the inflamed parts, I consider as full evidence of the inflammation being erythematous.

The chalky liquid when first secreted gives to the finger the feeling of fluctuation, and cannot be distinguished from the ordinary serous effusion of gout. But unfortunately the absorbents cannot suck up the chalky particles. The consistence of the liquid, therefore, becomes thicker and thicker, till at last nothing remains but a hard mass. When even a considerable effusion of this kind occurs, the quantity of chalk which ultimately remains is comparatively small; as by far the greatest quantity is merely serum. It therefore usually requires repeated effusions to form any great mass of chalk, and the consistency depends upon its age, and the activity of the absorbents. The quantity at last accumulated by repeated paroxysms is in some instances immense; which augments very seriously the sufferings of the gouty. The distress, however, is not owing to any irritating quality in the chalk, but to its obstructing the motion of the tendons and joints, occasioning often a complete anchylosis, and pressing and distending the surrounding parts by its bulk. It acts therefore by mechanically embarrassing the machine of the body, and not upon the living principle; for it will often remain for years in parts highly sensible, without exciting the slightest pain or inflammation.

Although these concretions are of so mild a nature, they often are the cause of extensive mischief; bursting externally, and occasioning ulcers very difficult to heal. When a violent fit of the gout attacks a chalky tumor, the appearance is frequently very alarming, the new paroxysm being accompanied with a fresh serous and chalky effusion, which added to the old deposit of chalk, occasions a prodigious swelling, the cutis when distended to the utmost opens; yet sometimes the cuticle remains entire. The chalky or serous liquid may then be seen through the semitransparent epidermis. The surrounding integuments appear of a deep red, or of a purple hue, threatening mortification; while the pain is excruciating.

At length the cuticle gives way; a discharge of serum and chalk takes place, and a remission of all the symptoms usually follow.

During the whole of this alarming process, suppuration never occurs; but soon after the opening has taken place suppuration commences; and pus and chalk are then discharged from the ulcer. There are several unexpected occurrences in the progress of such ulcerations. When an opening is formed, the whole of the chalk never escapes, and its complete evacuation is usually a very tedious process.—This is owing to its being diffused through the cellular membrane, as in the cells of a sponge. One cell must sometimes give way after another, and small portions of chalk are successively thrown out; so that months, and even years pass away, before the whole is discharged. It also frequently happens, that the orifice contracts and closes over; leaving portions of chalk underneath. This kind of cicatrix sometimes stands its ground; but more commonly breaks out again and again, to discharge chalk. Even openings into joints, which are so dangerous when occasioned by other extraneous bodies, are often attended with no serious symptoms when the joint is filled with chalk. On such an accident happening, a surgeon unacquainted with these peculiarities, might be tempted to propose large openings, or even amputation, as the only resource for hindering extensive inflammation and carious bones. But if he treats the disease mildly, he will find that no such severe plans are requisite; for the parts will probably fall into a very tranquil, or indolent state: a sore will continue for a certain period, discharging pus, and occasionally a bit of chalk, till at last the orifice will close up. Independent of the openings formed by a fit of the gout, the skin, stretched over a mass of chalk, is sometimes thinned, absorbed, and pierced by mere pressure. At other times this is effected by common inflammation and suppuration. When openings take place in these milder ways, a less quantity of chalk is usually evacuated. But this depends entirely upon the degree of inflammation. Where the suppuration is great, it naturally detaches and washes out a greater quantity of chalk.

The last peculiarity is the rarest, namely, that a dry hard piece of chalk shall pierce the skin, and remain like an excrescence, without exciting either inflammation or suppuration.

The treatment to be adopted in these various cases is next to be considered; and it must be acknowledged, that upon this

most important point our powers are extremely limited. For gouty inflammation admits of little control; and as the lymphatics are incapable of absorbing chalk, we have no means of dispersing such tumors.

The shocking appearance of a severe fit of gout, when it attacks a part in which there is an accumulation of chalk, has been already noticed. In this situation, a warm poultice is a far better application than dry wool or flannel. If there is any threatening of gangrene, the poultices ought to be of the cordial kind, into the composition of which, porter, wine, or opium should enter. Fomentations likewise sometimes give relief. If the cutis opens, yet leaves the chalky effusion confined by the cuticle only, a puncture should instantly be made. It is imprudent to touch with a lancet the organized cutis, or even to make a large opening into the cuticle, to expose internal parts in so precarious a state; nor would it be judicious at first to use pressure to squeeze out the chalk. Even a small puncture will permit some portion of the fluids to escape, and more will run out into the poultice. The tension is then removed, and the symptoms commonly improve. When the inflammation has subsided, greater freedom may be used. Some portion of the cuticle may then be removed, to facilitate the discharge; and gentle pressure may be employed.

During the violent paroxysms that have been described, if the inflamed part is threatened with gangrene, and the patient with death, the ordinary cautious treatment of gout is entirely superseded.—Bark, aromatics, volatile alkali, opium, and wine must be exhibited in doses proportioned to the danger, and to the powers of the stomach. These stimuli ought to be gradually left off, as the danger lessens.

After the violence of the fit has subsided, an ulcer frequently remains with chalk at the bottom, which renders it extremely difficult to be healed. It is bad practice to attempt the removal of the chalk by the knife. For a wound might occasion a renewal of gout, or at least a great deal of inflammation; and as the chalk is a solid substance and dispersed in separate cells, very little could be removed by the incision. Caustics employed with caution answer better; for by destroying the membrane that confines a bit of chalk, it is often enabled to escape. Mild

dressings only are to be used; stimulants, such as the hydrargyrus nitratus might excite extensive mischief; for it must always be recollected that the gouty habit is highly irritable.

It is quite impossible to prognosticate when ulcers with chalk at the bottom will heal. They sometime become a species of issue for years, and patients flatter themselves with their being beneficial. I have not, however, seen any proof of this; nor could I observe that they diminished the frequency of fits of gout.

Masses of chalk are sometimes formed on parts so inconvenient, or occasioning such deformity, that patients are anxious to get rid of them, even at some risk. On some favourable occasions, where the constitution is sound, this may be effected by destroying the skin by the kali purum. The inflammation that follows the application of caustic is seldom considerable. It, therefore, is the best method of discharging chalk. On many occasions the argentum nitratum is sufficiently powerful. After an opening is formed, the sore is to be treated as has been already explained.

These observations are not intended as a full account of all that may be done in chalky tumors, or in ulcers arising from them, as the common rules of surgery are often applicable to such cases. I have principally taken notice of the peculiarities, which demand a deviation from those rules. It may, however, be collected from these remarks, that we are quite unable to remedy many of the evils caused by chalk. When this substance is thrown into a joint, its motion is either embarrassed, or entirely lost; when it is poured into the sheath of a tendon, the movement is obstructed, and the muscle to which it belongs is rendered useless. And when it bursts externally, ulcers of long, or endless duration, are the consequence.

These irremeable disasters ought to be represented to those who are subject to gout, to induce them to submit to such restrictions in diet, and to adopt those healthful exercises, which the experience of ages have ascertained, to be the only effectual remedies for extinguishing this deplorable malady.

The proof of this does not rest upon the delusive testimony, or oaths of even respectable and disinterested men, a species of proof which is scoffed at by all who comprehend the subject, as it is found that the attestations are strongest, and the affidavits

most numerous in favour of a medical fact, just in proportion as the fact is doubtful, or false; and that the number of specifics, and the evidence in favour of them, multiply exactly in proportion to the incurableness of the disease.

To illustrate this, take common inflammation; to lessen this affection, there are a few well known remedies: while for scrophulous inflammation which is much less tractable, the number of boasted remedies is far greater; but for gouty and cancerous inflammation, the infallible specifics are innumerable.

Time alone establishes truth in medicine. A real discovery needs not the aid of oaths, nor the zealous testimony of the grateful. By not trusting to this, the over-officious perjure themselves with good faith, to the infinite detriment of their fellow-sufferers, whom they wish to relieve. No man takes the trouble to swear, that he never saw a chalk-stone in the feet of a seaman, a soldier, or a common labourer. Nor are there any affidavits annexed to cases where abstaining from fermenting drinks, abandoning animal food, and employing daily great bodily exercise, restored martyrs to the gout, to health and strength.

Such cases have occurred in all countries, and in all ages, since medical records were kept; and are authenticated by proofs far superior to the oaths of the patient and his sympathizing friends. No credit should be given to the ignorant.

But who can benefit by such examples? So strict a regimen can only be adopted by those who are reduced to it by necessity; or by the few who are capable of relinquishing present gratifications, to escape future torture.

Means of Preservation from Imminent Danger.

[From the Annual Report of the Royal Humane Society for 1811.]

I. *Captain* MANBY'S *Method of Preserving Shipwrecked Mariners.*

SIR, Yarmouth, Norfolk, March 28, 1808.

THE many melancholy instances of shipwreck which are too often witnessed on every coast of Great Britain has long excited the feelings of this enlightened nation through your philanthropic institution; and, when we consider the vast number of our fellow creatures who have perished; when we reflect on the great proportion of our countrymen who are exposed to the hazard of the sea; when we remember the importance of our sailors to our commercial interest, and to our national security; it is the duty of every friend to humanity, every friend to his country, to show himself eager to diminish danger, and use all the probable means for affording help in the hour of difficulty and distress.

Animated by these sentiments, and witnessing disasters so repeatedly happening on these shores, particularly on the 18th day of February, 1807, when numerous vessels were wrecked, and all hands perished; among them his majesty's gun brig Snipe, that was stranded near the Haven Mouth, at this place, not fifty yards from the beach, notwithstanding, from the violence of the sea and strength of the storm, no communication could be procured; and sixty-seven persons perished, in the presence of their sympathizing countrymen; from this circumstance I was led to endeavour (although repeatedly told it was totally impracticable) to prevent similar distresses in future, and directed my attention to what sailors think of most consequence, the securing a communication between the shore and the vessel in distress, by the means of throwing a rope by the force of gunpowder; knowing, in the success of that expedient, there were numerous ways to rescue the unfortunate persons on board. From the melancholy day above stated I have been making innumerable experiments that appeared best calculated to promise success. I have now the opportunity and

heartfelt gratification of submitting to the consideration of your noble institution minutes of experiments, an affidavit of its success, and opinions of active and intelligent men, of the good likely to result from it to this country, and to every nation on the confines of the ocean. I have the honour to be,

Sir, with all possible respect,

Your most obedient, very humble servant,

GEORGE WILLIAM MANBY, Capt.

Barrack Master at Yarmouth.

P. S. The right honourable board of ordnance have, in consequence of my application, directed to the dangerous stations of Cromer, Happisbro', Winterton, Yarmouth, Lowestoft, and Orferness, to be provided with the means adopted by me, to give relief in future.

To the Treasurer of the Royal Humane Society.

Captain Manby has since made several successful experiments with the method of preserving the lives of shipwrecked persons by means of a rope thrown over a vessel in distress, from a mortar on shore. This rope is secured from burning by a sheath of leather round the end introduced into the mortar with the ball. The experiment was made at Lowestoft, on the 26th of August and 10th of September, before many spectators, and several persons of the Suffolk Humane Society; and the opinion of the latter has been confirmed by the united testimony of many naval officers.

" Suffolk Humane Society at Lowestoft,

Aug. 26, and Sept. 10, 1807.

Rev. I. G. Spurgeon, Vice-President,
Rev. Bence Bence, Treasurer, } in the Chair.

On both occasions it was unanimously resolved;

" That, in the opinion of the Suffolk Humane Society, as well as of that of many other gentlemen present, captain Manby's experiments for effecting a communication between the shore and a stranded vessel, made by throwing a shot, with a rope appended to it, over a vessel, if she be near land; or by a grapnel thrown from a mortar, by which a boat can be hauled over the

surf; have completely answered the purpose for which they have been attempted.

"M. MAURICE, Secretary."

The society instituted at London for the Encouragement of Arts, Manufactures, and Commerce, voted captain Manby their gold medal in testimony of the importance of his discovery.

In addition to the foregoing information, inserted in the Report of 1809, G. L. Reed, Esq. of Hackney Grove, an active friend of this society, and who was principally instrumental, with the late Dr. Hawes, in establishing the Lowestoft Humane Society, has favoured this society with the subsequent communication.

MY DEAR FRIEND,

As every instance of benevolence affords you peculiar pleasure, I have the satisfaction to transmit one that I am sure will be highly gratifying. There are particulars not explained that might have been introduced, that would delight your affectionate daughter; such as the men on shore stripping off their dry clothes to put them on the poor wet sailors, as soon as they reached the shore, and the uncommon tenderness of the people of the inn to comfort the distressed foreigners. These particulars are omitted in the narrative, but to you will be pleasing. Captain Manby last week tried some new experiments. Two anchors were laid out 140 yards from the shore, a rope suspended between the anchors, and a buoy floating in the middle; a barbed shot was fired from a mortar with a rope of two inches and a half attached to it. The shot went over the rope fastened to the anchors. It was then hauled tight, and the resistance was found equal to pull off any boat from the beach, however rough the surf. On this plan we are about to act. You have heard of the remarkable preservation of a man by our life-boat on Dec. 13. Indeed, my friend, that day was an evidence of such exertion as I cannot sufficiently praise. Would you have any objection to lay the narrative before your honourable board? To them every such statement will be gratifying; and they may rely, that whatever reward they

bestow upon any whom they deem deserving of their notice, if transmitted to either the treasurer or secretary of the Suffolk Humane Society, will be applied precisely as they direct.

Believe me ever your obedient and sincere friend,

M. MAURICE.

Normanstone, Jan. 16, 1810.

To G. L. Reed, Esq.

The following very interesting narrative was presented to the committee of the Suffolk Humane Society, held at the Rev. J. G. Spurgeon's, Lowestoft, on Monday Jan. 15, 1810. Its importance to the public does not merely depend upon its authenticity, but also upon the knowledge of the means that have been effectual in preserving life when exposed to the greatest danger.

On Saturday Jan. 13, the hoy Elizabeth Henrietta, of Papenburgh, captain Vanderwall, from Liverpool to Rotterdam, salt laden, sprung a leak, and after 15 hours incessant toil at the pumps, the men were obliged to run the vessel on shore near the signal house in Kessingland. The distance from Lowestoft is near four miles. The wind was at east, and blew very strong. A very heavy surf was upon the shore. It was evident that unless a communication could be secured by throwing a line from the shore to the ship, according to captain Manby's judicious plan, the crew must inevitably perish. All the apparatus was at Lowestoft. Every possible exertion was applied to facilitate its removal; still, from the distance, the nature of the cliff, and the roads, unavoidable delay occurred before the mortar could be fired. In the mean time a buoy was veered from the ship, but not near enough to be reached by a grapnel. The crew consisted of the captain and seven men. The captain betook himself to the shrouds, about one-third of the way up the mast; the seven men secured themselves on the bowsprit. The deck was under water; the whole ship ready to sink. In these circumstances the mortar was fired. The shot and line reached the bowsprit, and fell in the midst of the seven men. The line was only one inch and a half in circumference; to this the seven men fastened themselves, about two yards distant from each other. They then

dropped in succession into the sea, and sunk till the line was hauled tight from the shore. Sometimes they were seen, sometimes covered with the sea. In this manner they were dragged about eighty yards through the water, and then all safely landed. Six out of the seven lowered themselves into the sea free from entanglement; the seventh by accident threw himself on the wrong side of the rope attached to the bowsprit. In this situation they would have perished had not the rope fastened to the bowsprit broken, when the line from the shore was hauled tight. The feelings and painful anxieties of the persons on the shore, who were aware of the extent of the pending calamity, can better be imagined than described. The afflictive part of the narrative remains to be stated. Captain Vanderwall was still in the shrouds, and saw all his people safe on shore. The signs he made showed the anguish of his mind; all was done for his relief that could be done. A second shot was fired, and the rope attached to it was thrown on the yard of the ship where the captain was standing. He looked earnestly at the rope, but, from some cause made no attempt to reach it. The deck was then broken up, and all communication with every other part of the ship was cut off. Another shot was fired, and the rope passed very near the unhappy sufferer. At this instant all the masts gave way, and the captain was buried in the midst of the wreck.

The greatest praise is due to the pilots and seamen of Lowestoft and Pakefield for their zeal and exertions upon this occasion; their zeal and exertions are indeed, on all occasions in which distress is witnessed, a most honourable part of their character. It would, however, be highly improper to omit the mention of Robert Rede, Joseph Denny, Charles Barrett, Thompson Swan, James Stebbings, jun. of Lowestoft; John Cunningham, of Pakefield; and John Davey, of Kessingland. The activity and perseverance shown by the above persons cannot be too highly extolled. The judicious plans and indefatigable attention of captain Hinton, of the royal navy, Mr. James Reeve, and Mr. Elph, entitle them to the highest approbation.

II. *Mr.* Thomas Cleghorn's *Method of saving Shipwrecked Mariners.*

This ingenious writer, inventor of the ice life-boat, has published in his Navigator's Life-buoy, various plans of forming navigation life-boats; in a great measure by means of empty hogsheads or casks closely bunged to confine the air. He has kindly given unlimited permission to introduce here, his useful observations and directions.

In shipwreck, where only a single empty hogshead or cask is at hand, without a boat or plank lashed to it, it would be liable to turn or roll in the water. But if two casks could be had, the best way would be to lash them together side to side, which would completely prevent them from turning, and so secured, might support twenty or thirty men in sea-water.

It may be remarked that casks lashed together, two by two, for detached parties of men, will generally be preferable to any other number of casks so lashed; because they do not turn in water like one cask, and they have a greater proportion of horizontal circumference than three, four, or any other larger number; and when casks are lashed together in pairs, men may cling to both ends, and to one side of each; but if three or more casks are lashed close together, side to side, men can only cling to the ends, and to one side of the first and last, there being no room between the sides of the intermediate casks.

Very useful rafts might frequently be made, by lashing empty casks to planks, broken masts, yards, oars, boards, or almost any other pieces of timber at hand. Thus a broken mast, yard, or plank, may have an empty cask lashed across each of its ends, and being so much heavier than the casks in water, would always be undermost, and serve as a keel. Two ropes might be fixed to the uppermost parts of the ends of the casks, and drawn tight, parallel to the keel, and to one another, for the men to hold by.

To a boat, capable of carrying only six men in moderate weather, were two hogsheads, or even only one placed inside, and strongly lashed near the middle (if two casks, one near

each end) of the boat, as high as can be done conveniently, it is presumed that at least fifty men might be supported.

Were the use of empty, or air casks, to be adopted for the purpose in view, it would be proper to have rings or hoops permanently affixed to the casks, by which men might hold, and to which ropes or cords might quickly be tied when wanted.

III. *The Cork Jacket.*

This apparatus of easy construction, consists in sewing thin flat pieces or shavings of cork, in a waistcoat or jacket to fit close to the body; and being secured by buttons or strings, will remain in a state of sufficient stability.

IV. *Mr* Mallison's *Method of applying Cork to prevent drowning.*

This ingenious method consists in adjusting two pieces of cork, so secured by tape or cords, as to be made to fit the breast and back, and to retain the positions in which they are placed; at the same time admitting a free use of the arms. The whole apparatus may be procured at a very trivial expense.

V. *Mr.* Spencer's *Invention of a Marine Spencer.*

This is made in the form of a girdle, of a diameter to fit the body, six inches broad, composed of about 500 old tavern corks strung upon a strong twine well lashed together with lay-cord, covered with canvas, and painted in oil so as to make it water proof.

Two tapes or cords, about two feet long, are fastened to the back of the girdle, with loops at the ends. There is another tape or cord, about two feet long, in the middle of which a few corks are strung, covered with canvas, and painted as above. There is a pin of hard wood, three inches long, and half an inch diameter, fastened to the front of the girdle by a tape or cord about three inches long.

When the mariner's spencer is to be used, slide from the feet close up under the arms, bring the tapes or cords one over each shoulder, and fasten them by the loops to the pin, and

bring the tape or cord between the legs, and fasten it to the other pin.

A person thus equipped, though unacquainted with swimming, may safely trust himself to the waves; for he will float head and shoulders above water in any storm, and, by paddling with his hands, may easily gain the shore.

Such a spencer may also be made of cork shavings at a very trivial expense.

VI. Chinese *Method of preventing Children from drowning.*

In this empire, in which perhaps millions of persons live almost wholly on board vessels on its numerous canals, it is customary for parents, to preserve their children from drowning in consequence of falling into the water, to tie upon the back of each child an empty gourd or calabash, well corked, with which they run about the decks of the vessels; and, if the accident of falling overboard should happen, they are preserved from sinking or drowing by the buoyancy of the calabash.

VII. Arabian *Invention of a Life Preserver.*

One of the most ancient methods of preventing drowning, perhaps coëval with navigation and piracy, is by the skin of a goat; though its advantages were too often applied to facilitate injustice and rapine. The banks of both the Euphrates and Tigris are infested with robbers, who are accustomed to swim aboard of the boats in the water, and to carry off whatever they can seize. Travellers have often been surprised at the length of the distances which the Arabs will pass floating on the water. They accomplish these voyages by means of a goat's skin, of which they sew very completely the different openings, with the exception of the skin of one of the legs, which they use as a pipe to blow up the rest of the skin, and afterwards twist and hold it very tight. After this preparation, they strip themselves naked, form a package of their clothes, and tying it on their shoulders, lay themselves flat on the goatskin, on which they float very much at their ease, paddling with their hands and feet, and smoking their pipes all the time. Not

only men, but women and girls, adopt this method of crossing the river, and make the air reecho with their songs while they are passing.

VIII. *Mr.* DANIEL'S *Invention of a Life Preserver.*

The body of the machine, which is double throughout, is made of pliable water proof leather, large enough to admit its encircling the body of the wearer, whose head is to pass between two fixed straps, which rest upon the shoulder; the arms of the wearer pass through the spaces on the outside of the straps; one on each side, admitting the machine under them to encircle the body like a large hollow belt; the strap on the lower part of the machine is attached to the back of it, and by passing betwixt the thighs of the wearer, and buckling, holds the machine sufficiently firm to the body, without too much pressure under the arms. The machine being thus fixed, is inflated with air by the bearer blowing from his lungs, through a cock affixed to the machine, a sufficient quantity of air to fill the machine, which air is retained by turning the stop-cock. The machine, when filled with air, will displace a sufficient quantity of water to prevent four persons from sinking under water.

Case of Axillary Aneurism, in which the Subclavian Artery was tied behind the Clavicle.

BY THOMAS RAMSDEN,

Surgeon to the Royal Foundation of Christ's Hospital, to the Foundling, and Assistant Surgeon to St. Bartholomew's Hospital.

Extracted from Ramsden's Practical Observations on Sclerocele, Aneurism, &c. London, 1811.

THIS case did not prove ultimately successful; yet as all the more immediate objects of the operation were most satisfactorily obtained, I have thought it right to submit the following detail to the perusal of the profession, under a presumption that it contains several practical facts of considerable importance, not only with reference to this particular operation, but also to our future conduct in all cases of aneurism.

John Townly, a tailor, aged thirty-two years, addicted to excessive intoxication, of an unhealthy and peculiarly anxious countenance, was admitted into St. Bartholomew's hospital on Tuesday the 2d of November 1809, on account of an aneurism in the axilla of his right arm, which had been coming on he said about four months. He could not trace its origin to any accident; at first he supposed the swelling to be only a common boil, and therefore paid little attention to it, until the pulsation in the tumor and a distressing tingling sensation at the ends of his fingers, deprived him of sleep and rendered him incapable of working at his trade.

When he was received into the hospital, the prominent part of the tumor in the axilla was of the size of the half of a large orange; there was also a very considerable enlargement and distention underneath the pectoral muscle and adjacent parts, which prevented the elbow from being brought, by the distance of several inches, into contact with the side.

The temperature of both arms was alike, and the pulse in the radial artery of each of them was correspondent. After the patient had been put to bed, some blood taken from the left arm, and his bowels emptied; his pulse, which on his admission had been at 130, became less frequent; his countenance appeared

more tranquil; and he experienced some remission of the distressing sensations in the affected arm: this relief however was of short duration; the weight and incumbrance of his arm soon became more and more oppressive, and in resistance to every medical assistance his nights were again passed without sleep, and his countenance reassumed the anxiety which had characterized it, when he first presented himself for advice.

On the sixth day after his admission, his decline of health became so very evident, and the progressive elevation of the clavicle, from the increasing bulk of the tumor, was so decidedly creating additional difficulties to any future operation, that I considered it necessary to convene my colleagues, and avail myself of their opinions as to the propriety of performing the operation; when it was agreed in consultation, that as "the tumor (although increasing) did not appear immediately to endanger the life of the patient, from any probability of its bursting suddenly, it would be advisable yet to postpone the operation for the purpose of allowing the greatest possible time for the anastomosing vessels to become enlarged; and in the meanwhile that the case should be most vigilantly watched."

About this period of the case the pulsation of the radial artery of the affected arm gradually became more obscure, and soon after either ceased entirely, or, what is more probable, was lost in the succeeding edema of the fore-arm and hand, both of which became loaded to a great extent.

Notwithstanding the aneurismal tumor had continued to increase, and the patient's health had proportionately declined, yet no particular alteration was observed on the integuments until I visited him in the evening of the twelfth day after his admission, when I found him complaining of more than usual weariness and weight in the affected limb, and painfully impatient from the impossibility, as he described it, "of finding a posture for the arm."

On examining the tumor a dark spot appeared on its center, surrounded by inflammation, which threatened a more extensive destruction of the skin. Under these symptoms and appearances no farther postponement of the operation being admissible, I performed it next day in the following manner.

Of the Operation.

The patient being placed upon an operating table, with his head obliquely towards the light, and the affected arm supported by an assistant at an easy distance from the side, I made a transverse incision through the skin and platysma myoides, along and upon the upper edge of the clavicle, of about two inches and a half in length, beginning it nearest to the shoulder, and terminating its inner extremity at about half an inch within the outward edge of the sterno-cleido mastoideus muscle. This incision divided a small superficial artery, which was directly secured. The skin above the clavicle being then pinched up between my own thumb and finger and those of an assistant, I divided it from within outwards and upwards in the line of the outward edge of the sterno-cleido-mastoideus muscle to the extent of two inches.

My object in pinching up the skin for the second incision was to expose at once the superficial veins, and by dissecting them carefully from the cellular membrane to place them out of my way without wounding them. This provision proved to be very useful, for it rendered the flow of blood during the operation very trifling comparatively with what might otherwise have been expected; and thereby enabled me with the greatest facility to bring into view those parts which were to direct me to the artery.

My assistant having now lowered the shoulder* for the purpose of placing the first incision above the clavicle (which I had designedly made along and upon that bone), I continued the dissection with my scalpel until I had distinctly brought into sight the edge of the anterior scalenus muscle, immediately below the angle, which is formed by the traversing-belly of omo-hyoideus and the edge of the sterno-cleido-mastoideus, and having placed my finger on the artery at the point where it presents itself between the scaleni, I found no difficulty in tracing it without touching any of the nerves to the lower edge

* In my first incision I intentionally cut down along and upon the clavicle, as a security against wounding any superficial vessels, a very little lowering of the shoulder therefore placed the incision in the situation I wished to have it for the purpose of proceeding with the operation.

of the upper rib, at which part I detached it with my finger nail for the purpose of applying the ligature.

Here however arose an embarrassment, which (although I was not unprepared for it) greatly exceeded my expectation. I had learned from repeatedly performing this operation many years since on the dead subject, that to pass the ligature under the subclavian artery with the needle commonly used in aneurisms would be impracticable; I had therefore provided myself with instruments of various forms and curvatures to meet the difficulty, each of which most readily conveyed the ligature underneath the artery, but would serve me no farther; for being made of solid materials and fixed into handles, they would not allow of their points being brought up again at the very short curvature which the narrowness of the space between the rib and the clavicle afforded, and which in this particular case was rendered of unusual depth by the previous elevation of the shoulder, by the tumor.

After trying various means to overcome this difficulty, a probe of ductile metal was at length handed me, which I passed under the artery, and bringing up its point with a pair of small forceps, I succeeded in passing on the ligature, and then tied the subclavian artery at the part where I had previously detached it for that purpose. The drawing of the knot was unattended with pain, the wound was closed by the dry suture, and the patient was then returned to his bed.

Copy of the Journal.

Evening visit on the day of the operation.—The distressing tingling sensation at the ends of the patient's fingers ceased from the time the ligature was applied to the artery; he already has greater facility in placing the affected arm, and is in all respects much more free from pain than he was previous to the operation; he has had some refreshing sleep; his pulse is 110; the temperature of both arms appears equal; the patient indeed says, that to his feeling he has even more warmth in the affected arm than in the other.

Morning visit second day.—The patient has passed a much more quiet night, and feels more comfortable than at any time ince his admission into the hospital; he has slept five or six

hours; his tongue and skin are moist, and his pule is less frequent. The temperature of both arms is alike, and the same as last night.

Evening visit second day.—The patient has dozed a little during the afternoon, and taken light nourishment in the course of the day; his pulse is 120, yet regular; he complains somewhat of thirst, but his skin and tongue are moist; the temperature is the same in both of his arms; the tumor is less tense; the edema of the fore-arm and hand is considerably reduced; the inflammation of the skin in the axilla has subsided; the discolored spot is not at all increased, and the patient is entirely free from pain.

Morning visit third day.—The patient did not go to sleep before five o'clock in the morning, but from that time until nine o'clock he has enjoyed a composed sleep, and says, that he feels himself much refreshed, and that he is perfectly relieved from all pain and uneasiness. The temperature of both arms continues equal and the same as last night.

Evening visit third day.—The patient makes frequent attempts to expectorate, and says that "he is inconvenienced by phlegm;" he has had sleep at intervals and is quite free from pain; the skin and tongue are not so moist as yesterday, and the pulse is a little irregular. The tension of the tumor is very much abated; the edema is nearly removed; the discolored spot in the skin of the tumor has not increased; the temperature of both arms is equal.

Morning visit fourth day.—The patient has passed a very good night, and says that he feels much more comfortable than at any period since the commencement of his complaint; he has not any pain in the wound or affected arm; the skin and tongue are moist, his pulse is 105, and both regular and soft; the discolored spot in the tumor is more darkened, but it has not extended; a small superficial crack is observable in its center; there is no difference between the arms in their temperature.

Evening visit fourth day.—The patient has taken sufficient nourishment, with wine occasionally; the discolored spot in the axilla has extended to the size of a dollar, and there is a little oozing from the crack in its center. The tension of the tumor is farther lessened, and the edema of the fore-arm and hand is entirely removed. The patient complains of thirst, his tongue

is dry, and the pulse increased to 130; the temperature in each arm is the same; he is yet incumbered with what he calls phlegm, and seems to suffer under oppression at his chest.

Morning visit, fifth day.—The patient has slept during the greater part of the night, his pulse is very quick, and at times very feeble; his tongue is parched, the skin dry and heated; the sloughing point on the tumor is more distinctly marked at its edge, but it has not extended; the oozing from its center is merely superficial. The wound is now dressed for the first time; it has a favourable appearance and is quite free from pain; the patient complains of great weariness and weight in the affected arm, and labours under considerable oppression at his chest; the temperature in both arms continues to correspond.

Visit fifth day, four o'clock P. M.—The patient about noon became restless, and betrayed symptoms of aberration of mind; he now expresses great anxiety to see his relatives, as he has something, he says, to impart to them of great importance which preys upon his mind; he has been observed during the day to place his hand frequently upon his breast; he complains of the affected arm; his pulse is very rapid and intermittent; the arms are of equal warmth; the slough in the axilla is not more separated.

Evening visit, fifth day.—The patient's wife and brother are with him; he has unburthened his mind to them, and appears to be more composed; his pulse however is too rapid to be reckoned, and intermits.

On being asked what causes him so frequently to place his hand upon his chest, he replies, " My pain, it is in my heart!" An attempt is made to cheer him with a hope of recovery; he becomes more tranquil, and expresses a wish to be raised in his bed; the assistants being unable to place him quite upright, he makes an exertion to raise himself; a strong convulsive action takes place about the region of the heart, his countenance changes, and in an instant—he expires.

Appearances after Death.

On examination of the body after death but few peculiarities presented themselves, some of them however appear to me to be well deserving our attention.

The subclavian artery, excepting at the aneurismal aperture, was in a perfectly healthy state. The arteries branching off from it, on which the limb was to be dependent for its future support, had not acquired any increase of capacity beyond that which is natural to them. The heart, and the large vessels immediately in connexion with it, were perfectly sound, but on opening the vena cava superior it was found to contain a large body of coagulable lymph, firmly adherent to its internal coat, and hanging pendulous into the auricle, where it applied itself like a valve, and totally obstructed the communication between the auricle and the ventricle.

The aneurismal tumor contained about two pints of blood, the greater part of which was in so fluid a state that it escaped through a small puncture which I made with my scalpel. The front of the tumor was covered with a strongly connected substance, bearing some resemblance to a sac, but its posterior and other boundaries were formed merely of those parts (unaltered from their healthy state) with which the effused blood had happened to come into contact.

The subclavian artery where the ligature was applied was so very nearly separated, that it only held together by a few shreds of dead matter. Each extremity of the almost divided artery, on being laid open, was found to be already completely consolidated and impervious, and no doubt could exist of its being at this early period fully competent to resist the impetus of the blood from the heart. I had also to remark at these extremities a small deposit of coagulable lymph, which was closely connected with the internal coat of the vessel, and seemed to be placed there as an additional means of securing its obliteration.

In considering the facts presented by this case, our attention is first attracted to those which offered themselves during the operation, and next to those which occurred immediately after the application of the ligature.

By the former we perceive that the tying of the subclavian artery behind the clavicle is not only practicable, but with the assistance of proper instruments almost as easy as many other

operations in surgery; from the latter we learn, that notwithstanding the circulation in the arm is intercepted in the main channel, nature in her ample provisions supplies means to support the limb through anastomosing vessels, and that too without any additional increase of their natural diameter.

This consideration is of great importance, and may guide our practice in regard to aneurismal affections in general.

It has been a received opinion, that in every case of aneurism it is prudent to defer the operation as long as possible, in order to allow time for the anastomosing branches to become enlarged previous to the main artery being obliterated; and that the chances of recovery to the patient are proportionate to the time which can be allowed for that purpose.

This opinion was acted upon in the present instance, so far as the immediate safety of the patient could permit. The operation was not performed until upwards of four months after the tumor was first discovered; at the end of which long period however, (as appeared on dissection,) no observable increase of size had taken place in any of the anastomosing vessels,* yet they proved quite equal to the support of the limb; and though the current of blood through the subclavian artery was thus cut off, the temperature of the arm did not experience even a momentary interruption.

It may farther be remarked, that the arm instead of suffering in other respects any inconvenient privation, as might have been expected, from the loss of its chief artery, not only became immediately free from pain, but so far from exhibiting any deficiency of its customary powers, was perfectly at the patient's disposal in regard to posture (though previous to the operation he could not move it at all,) and had actually recovered from the whole of its edematous appearance within forty-eight hours after the operation.

Whilst these favourable circumstances were taking place in

* When, after death, the anastomosing vessels of a limb which has at a previous time been successfully operated upon for aneurism are discovered to be enlarged, such enlargement is not to be viewed as a provision necessary to the preservation of the limb, but as a consequence which has taken place long after the limb has recovered its natural powers.

the arm, an equal improvement was observable in the general health of the patient.

On the second day we find him representing himself "as more comfortable than at any time since his admission into the hospital, enjoying sound sleep, his tongue moist, and his pulse less frequent."

On the third day he says he is much refreshed, is perfectly relieved from pain and uneasiness, and has to complain solely of some trifling inconvenience from phlegm.

On the fourth day in the morning he is yet farther improved, having passed a very good night, and feeling "much more comfortable than at any time since the commencement of his complaint."

Thus far, therefore, we distinctly see the system availing itself of the great relief afforded by the operation, and making every effort toward recovery. But in the evening of the fourth day the scene is materially changed.

Notwithstanding the patient had taken sufficient nourishment, we find the sloughing on the tumor extended in size; he is thirsty, his tongue is parched, and the pulse is considerably quickened; the temperature of the arms indeed still continues correspondent; but he complains more of phlegm, and obviously labours under great oppression in the region of the chest.

On the morning of the fifth day, many of these unfavourable symptoms are increased, but above all the distressing oppression at the chest, which he emphatically describes by placing his hand on the part, and by exclaiming, "Here, here is my pain, it is in my heart."

As the day advances the pulse become too rapid to be reckoned, and is intermittent; the circulation about the heart appears more and more laborious; and in attempting in the evening to raise himself up in bed, a violent convulsive action about the chest takes place, and he instantly—expires.

I have already stated that a considerable substance of coagulable lymph was found consolidated within the inner coat of the vena cava superior, which hung pendulous into the heart, and seemed to form a complete barrier between the auricle and the ventricle. The accumulation of this substance I consider as the immediate cause of death.

I am well aware I am hazarding this opinion in opposition to that of many professional men, whose acquaintance with anatomy, and whose knowledge in physiology justly entitle their sentiments to every respectful attention; yet, on this occasion, I venture to dissent from them.

Substances of coagulable lymph found in the larger vessels of the dead subject, are very generally believed to be separations from the blood, which take place after death, and they are therefore at no time admitted as a probable or possible cause of dissolution.

But I do not think it unreasonable to suppose (under certain irregularities of the circulation, or circumstances by which it is temporarily retarded,) that the coagulable lymph may be separated and become attached to the internal surface of any of the large vessels or the cavities of the heart, even during the vital course of the blood. Such a substance being pendulous and at first trifling, would accommodate itself to the passage of the blood, and for a while create no other inconvenience than occasional embarrassment about the chest; but when it has acquired geater bulk and length it would become liable to be placed in the way of the circulation, and so prove a mechanical and immediate cause of death.*

We observe the coagulable lymph to be separated and to accumulate at that part of an artery which is rendered unequal by disease: this fact is obvious in every aneurismal tumor: may not therefore such an occurrence take place when the free flow of blood through the large vessels is hindered by other causes?

In the present case small consolidated bodies of coagulable lymph were found deposited within each extremity of the disunited subclavian artery, which were so firmly attached to the

* I do not mean to say that bodies of coagulable lymph do never separate from the blood subsequent to dissolution, yet I think that many of such substances found in the larger vessels after death, may be gravitations which have taken place during the latter hours of nearly exhausted life. I apprehend also that those substances of coagulable lymph which are usually met with in the dead subject, although they may be slightly adherent to the surface of the vessel, are never found to be so firmly consolidated with it as I have represented that substance to have been, to which I referred in this particular case.

internal surface, and so peculiarly placed, that it is impossible they could have been deposited after death.

I have opened many children, who in apparent health had been suddenly seized with a convulsive action of the heart, and instantly expired (such cases are by no means uncommon); and I have invariably found in children who died under such circumstances, a substance of consolidated lymph, pendulous from some part of the cavities or large vessels of the heart, and like that described in the present case obstructing the channels of its circulation.

Although I consider the substance in the vena cava of this aneurismal patient as the immediate cause of his death (which opinion appears to me to be strengthened by the previous progress of oppression about the chest, and the peculiar manner in which he died, at the instant of attempting to raise himself in his bed, at which moment I conceive the pendulous extremity of the substance to have dropped into the auricle,) I am by no means disposed to say that he would have recovered if such an occurrence had not taken place.

I am indeed persuaded that he would not; because as the integuments over the aneurismal tumor had begun to slough and that process was in progression, the enormous cavity of that tumor would very soon have been exposed, and constituted a description of wound, which a patient, so very much reduced as this poor man was by the long continuance of the disease, could not possibly have survived.

Had this case however been operated upon at the commencement of the aneurismal affection, before so severe an impression had been made on the general state of health, before the tumor had acquired such magnitude, and before the skin covering it had taken on a diseased action, every past circumstance tends to persuade me that the patient might at this time have been a living example of the utility of well-timed surgery.

As I am not aware, though the operation has been attempted, that the subclavian artery has ever before been tied in the living subject at the point where it passes over the upper rib behind the clavicle, I trust I shall be excused for having so particularly described the manner in which I conducted the dis-

section, especially since the simple provision I have laid down for avoiding the superficial hemorrhage from the veins must necessarily secure the operator from the inconvenience of having the wound constantly filled with blood. I am well aware that in the present system of operating, the pinching up the skin is not held in any estimation; but as I do not feel myself authorized, for the sake of exhibiting a semblance of expertness, to do that which will prolong the sufferings of my patient, I must acknowledge I am not yet altogether a convert to its total exclusion.*

* For some farther remarks on this case, and for plates illustrating the aneurismal affection and the instruments employed in the operation, we refer to Ramsden's Practical Observations.

ORIGINAL PAPERS.

Experiments and Observations on the Lytta Vittata.

BY GEORGE S. SCHOTT, M. D.

In the summer of 1799, immense swarms of a peculiar insect were observed covering the potatoe patches in the vicinity of this city. Their numbers indeed were so great, as to destroy all the potatoe vines in a short time.

Several accidental observations excited a suspicion that they were vesicatories. This suspicion was strengthened by the result of a few experiments, and the fact was subsequently confirmed by Dr. Chapman of Bucks county, in this State, who finding by an extensive experience, that they answered all the purposes of the cantharides, published an account of their utility, in the New York Medical Repository, and gave them the name of *Meloe Americana.*

Quantities of the insect were collected at that time, and they were to be found, for a year or two afterwards, in the shops of our apothecaries. They, however, soon fell into disuse, and have since become almost entirely neglected.

The *Potatoe Fly* belongs to the genus *Lytta*, and is the *Lytta Vittata* of Turton and Fabricius.

The characters of the genus Lytta, are,

"Antennæ filiform; feelers four, unequal, the hind ones elevate; thorax roundish; head gibbous, inflected; shells soft, flexile, as long as the abdomen."

Turton's description of the *Lytta Vittata* does not answer completely to the *Potatoe Fly*, but is sufficiently accurate to designate it as the species he intended. It is,

"*Lytta Vittata*—shells black, with a yellow fillet and margin, inhabits America. Cantharis Vittata, Oliv: Inst: Tab: 1. Fig: 3.

"Head yellowish; crown red, with two black spots; thorax black, with three yellow lines; abdomen and legs black."

The following is a description made from several very perfect specimens of the Fly.

Antennæ black; head reddish brown; two dark brown spots on the crown; elytra dark brown, with a longitudinal yellow band in the middle, margined with yellow; thorax nearly round, of a dark brown color, with three longitudinal yellow bands in some, in others the bands are wanting; legs and abdomen black; abdomen covered with a cineritious down.

These insects have hitherto been supposed to inhabit chiefly the common potatoe* and beet;† but the notion I believe is incorrect, and their scarcity for several years past, has probably been owing to this mistake. They certainly are to be met with on other plants as frequently as those just mentioned. We are assured by Dr. Barton, that they live upon the pea, the bean, the mallows, the black snake root, and upon a great number of other plants of our own gardens, fields and woods; and that their vesicating property does not at all depend upon, neither is it influenced, or in any way altered by, the plant upon which they have been feeding.‡

When the fact of their inhabiting other plants, as well as the potatoe and beet is more generally known, I have not a doubt but that a sufficient quantity may be secured every August and September, which is the proper period for collecting them, to supply the demand of one year, and in some seasons a supply competent to serve several years, might be obtained.

In the preservation of these flies the ensuing process should be adopted.

Immediately after they are caught, which can easily be effected, as they seldom use their wings, they are to be killed, by subjecting them, tied in a cloth, to the steam of boiling vinegar or water; or they may be put into a bottle, which is to be immersed in boiling water. They are then to be spread out, covered with paper, and exposed to the sun till perfectly dry, which will be in one two or three days. Particular attention should be paid to this circumstance before they are put up for use, as they soon become putrid and spoil, when moist.

With these flies, I have experimented to a considerable ex-

* Solanum tuberosum. † Beta vulgaris.

‡ See Dr. Barton's Collections for a Materia Medica.

tent, and though the parcel subjected to trial had been in the shop of an apothecary for several years, and some of them were reduced to a powder, by the decomposition which is effected in them by time, yet, in every instance they excited vesication much quicker than cantharides applied at the same moment.

An extract made from a spirituous infusion of these insects, caused a blister in the space of seven hours.

A decoction in spirits of turpentine, prepared in the same way as Dr. Hartshorne recommends with regard to the Spanish fly,* produced vesication in a few minutes, by rubbing the fluid lightly into the skin, with a piece of flannel.

A plaster of these flies, applied to an adult, in the usual manner, raised very complete vesications in four hours.

The powder, sifted from among those that were in a state of decomposition, excited a fine blister, in five hours and an half, on my own arm.

In many cases, I have applied these flies to children, with the effect of uniformly occasioning vesication, in two, and three hours.

I have also very frequently applied them to adults, and have never found it necessary to let them remain on longer than from four to seven hours.

In short, from my own experiments and observations, corroborated by information which I have derived from a variety of sources, I have no hesitation in asserting that the *Lytta Vittata* act more promptly, and with greater certainty, as a vesicatory, and will retain, in activity, their epispastic quality for a much longer period of time than the *Lytta Vesicatorium;* and that, in every form, they are superior to the cantharides, and ought therefore to be introduced more generally into practice, and especially into that of *American physicians.*

Philadelphia, Dec. 1, 1811.

* See the first number of this Journal.

An Account of the Appearances on Dissection of several Scrofulous Subjects with a few Observations on the Connexion between Scrofula and Phthisis Pulmonalis.

BY JOSEPH PARRISH, M. D.

In the course of practice, more especially among the poor in the Philadelphia Dispensary, I have frequently witnessed the fatal termination of a disease which I shall call *scrofula interna;* and I have also been permitted in some instances to ascertain by dissection the morbid appearances.

The disease to which I allude, I have more frequently observed among people of colour than whites, but the latter are not exempt. It is commonly to be met with among children, seldom above four years of age, and I have known it prove fatal in an infant of three months.

To enter into a minute detail of every symptom may not be requisite. The most prominent are, cough, accompanied with dyspnœa, and fever assuming the hectic character; in some instances, occasional diarrhœa; a tumid abdomen, with great emaciation of the face and extremities; but this is not invariably the case. These form the general character of a complaint under which patients often linger for several months, when death kindly closes the scene. Among many persons, the symptoms are referred to worms, and the little sufferers are often very improperly subjected to the long continued use of various vermifuge preparations.

My attention was particularly directed to the disease shortly before the conclusion of my studies, in consequence of visiting a child of colour near the residence of my respected preceptor. The following appearances presented on dissection.

Abdomen.

The mesenteric glands were greatly enlarged, and contained thick purulent matter; the spleen was covered with tubercles.

Thorax.

The right lung was found adhering to the diaphragm; its superior part was of a whitish cast, and when cut into abound-

ed with thick pus; a part of its middle portion appeared to have been entirely absorbed, and about one ounce of thin pus was found in the cavity; the whole texture of the lung was so completely indurated that it must have been totally inadequate to the performance of its functions for a considerable time previously to the death of the patient.

The left lung was also diseased, and especially towards its superior part; it abounded with numerous hard tubercles about the size of a pea.

S. M., a man of colour, requested me to examine the body of his child, aged about three years. It had been gradually declining for several months with cough. I believe no physician attended it through the greater part of its illness; the father informed me he had lost another child exactly in the same way, and he supposed their death to be occasioned by worms.

DISSECTION.

Abdomen.

The mesenteric glands were enormously enlarged; some were equal in size to a walnut. On cutting into a number of them, they were solid throughout. Not a single worm was to be found in the whole extent of the intestinal canal.

Thorax.

Lungs diseased; right more so than the left; the former was filled with abscesses and abounded with purulent and caseous matter: it must have been unfitted for respiration for a considerable time; the latter also contained numerous tubercles, but they had not run on to suppuration. On comparing their structure with the enlarged mesenteric glands, they appeared similar.

A few months after this I examined the bodies of two children of colour who died with the disease.

Purvis, aged twenty-two months.

DISSECTION.

Abdomen.

Liver appeared enlarged, and its convex surface was adhering to the parieties of the abdomen; spleen was studded with tubercles; mesenteric glands slightly diseased; pancreas indurated.

Thorax.

Lungs were filled with tubercles; some of them had suppurated, and abscesses were formed.

Johnson; age not noted; supposed to be younger than Purvis.

Appearances were very similar to Purvis's, particularly the spleen; the lungs were filled with tubercles, but they were not so far advanced towards suppuration.

These dissections are calculated to show that the abdominal viscera and lungs are affected by scrofula; but in the following case I trust it will appear that not only these parts, but even the heart itself is subjected to this destructive malady.

G. H., the son of one of my particular friends, was affected soon after birth with a hard, dry cough; it was so peculiar that I never met with a case resembling it. Any person who heard the cough without seeing the infant might have concluded that it proceeded from a robust adult.

When he was about three months old, I attended him with a violent attack of pneumonia; his situation was almost hopeless; but a large blister over the breast produced an unexpected alteration for the better, and he recovered from a state of immediate danger; but his cough continued, and his short life presented little else but a scene of suffering. He was often afflicted with most violent pain resembling colic, for which his parents were under the necessity of giving him large doses of laudanum. A few weeks previously to his death he was removed into the country, but his cough and hectic symptoms

went on increasing; he had frequent vomiting, and from the account of his intelligent mother, he discharged purulent matter from his lungs.

A few days before his death he was seized with convulsions, and a few hours before he died I visited him; he was quite insensible; pupils greatly dilated. He resembled a patient in hydrocephalus; his pulse was unusually irritated and remarkably tense. He was about two years old, of a very light complexion, with fine, flaxen hair.*

Assisted by my friend Dr. Samuel Tucker, of Burlington, N. J., I made the following dissection.

Abdomen.

Mesenteric glands were enlarged; not a single worm to be found in the intestines. They were examined with great attention, inasmuch as one of his female friends seemed confident that his complaints originated from worms.

Thorax.

A considerable portion of the right lung was found adhering to the pleura costalis. It abounded with tubercles containing a caseous matter. Small abscesses were formed in some parts of the lung.

The pericardium was closely adhering to the heart, and when separated from it, the whole external surface of the ventricles was found covered with numerous small distinct points or tubercles of a whitish appearance. On cutting into the ventricles, they appeared natural; also the valves of the heart and cordæ tendinæ.

These tubercles were very different from the crust or covering produced during acute inflammation by an effusion of coagulating lymph; because I was acquainted with that appearance, having seen it lining the thorax, and in one instance covering the heart and the internal surface of the pericardium; but these tubercles were distinct and immoveable, being examined

* This child was frequently afflicted with ulceration behind his ears. As it was very troublesome, applications were made for the purpose of healing it; when this was effected, an increase of indisposition was so obviously the result, that I determined on permitting it to remain undisturbed.

with close attention. I feel no hesitation in expressing a belief that they were of scrofulous origin. The cranium was not opened.

To be compelled by the calls of professional duty to witness the fatal issue of a disease which only admitted of palliative treatment was really painful; yet it has had a tendency to awaken attention to some circumstances which appear calculated to shed light on the subject; and even if it should appear that my reflections are already anticipated, yet still I am willing to make a diffident attempt to offer some views to my medical brethren either for their correction or approbation.

1. When scrofula makes its appearance on the external parts of the body, does it not happen that in a large proportion of cases the glands about the neck are affected by it?

2. In some diseases, gout for example, do we not often observe a metastasis? and when it changes from an external to an internal part, it is productive of danger; hence this part of practice is so well understood, that physicians in general refrain from the use of such means as are capable of dislodging the disease from parts which are not esteemed vital.

3. When such metastasis has occurred, are not sinapisms directed to the extremities, in order if possible to excite the disease therein? or even if a vital part be primarily affected is not the same practice to the extremities adopted?

From observation I am induced to believe that the same thing may occur in scrofula, only in a more gradual way. In support of this I will just state, that during the last winter I was called to a child of R. W. a few days before its death with this disease. The mother informed me, that from the birth of the child it had been subject to cough and difficult breathing: a swelling having occurred about the glands of the neck, poultices were applied, but as it did not suppurate, mercurial ointment was rubbed on, and the tumor disappeared. After this, all her symptoms were aggravated, and the disease baffled every effort to arrest it.

I once attended a little girl who had a large abscess situated on the superior part of the thorax; the discharge was great, and the debility which followed was considerable. I directed a generous diet, with tonics; and under this treatment, with

proper applications to the abscess, it healed. This child fell a victim to scrofula interna, in less than a year afterward.

These cases may tend to show a translation of scrofula from external to internal parts. I now wish to prove the reverse of this proposition, and for the purpose will offer an example.

Hetty Killen, aged about thirty years, a woman of colour, came under my notice as a dispensary patient in the early part of the fourth month (April), 1809. She had been afflicted with cough for about twelve months, and was often unwell during that period; but although in an infirm state, she continued in a family at service until the 1st of 3d month (March), when her complaints increased to such a degree that she was compelled to leave her place. At the time I visited her, she was labouring under cough, frequent chills and fever, and I believed her disease to be phthisis pulmonalis in an incipient state.

The first time I saw her, she called my attention to several large scrofulous tumors situated on the thorax, which gave her a great deal of pain, and for which she was desirous of obtaining relief.

As my attention had for a considerable time been particularly directed to the subject, I viewed her case as uncommonly interesting, and determined on giving a trial to the efficacy of the external disease in removing the internal. Emollient applications were ordered to the tumefied parts, while palliative remedies were prescribed for the cough. Suppuration took place, and the abscesses were opened. A copious discharge was established, and happily for the patient there was an evident decline of the pulmonary complaint. I endeavoured to impress her with the absolute necessity of keeping the abscesses open, and she appeared convinced of the correctness of the practice.

Her recovery was not rapid, but has proved certain. After the pulmonary symptoms declined, she was several times afflicted with diarrhœa, and frequently had chills and fever, for which bark was occasionally employed.

The discharge from the abscesses continued until last fall, when her health appearing completely reestablished, she permitted the ulcers to heal.

I visited her on the 30th of last month, and found her in fine health. She informed me that last spring she was indisposed, and one of the abscesses opened afresh, and is now running; it is situated on the left side of the thorax, near the axilla; when she is the least unwell, the discharge from it is always increased.

I believe instances may be found on medical record of similar recoveries from phthisis pulmonalis.

Now I am induced to conclude that several important practical inferences may be drawn from these facts. In the first place they point out the danger of dislodging external scrofula; and I believe that this rule in practice should not be confined to children, but is capable of application to patients of maturer age, more especially at critical periods of life; and I can conceive of no situation wherein it should be more carefully observed than in a young and delicate female, just about the establishment of the catamenia, and who inherits a predisposition to phthisis pulmonalis, which, I believe, may be styled scrofula interna, in a large majority of cases.

Would it not be safer, under such circumstances, to bear the disease with patience, rather than incur the risk of its falling on vital parts. At any rate it ought never to be attempted, unless an artificial drain by issue or seton is substituted about the thorax or on the arm.

The case of Hetty Killen furnishes an instance of the salutary operation of nature in removing an internal disease by exciting an external one.

In further confirmation of this fact, I may just observe, that in the family of R. W. I have since been called to the youngest child labouring under cough and dyspnœa. A large scrofulous tumor formed on the side of the neck. Here, as in Hetty Killen's case, I was determined to depend on the external disease for the cure. I explained my views to the parents, who cheerfully concurred with me in endeavouring to establish a drain from the tumor. This was done, and a discharge kept up for several weeks, when it declined. Soon after this another very large tumor formed on the opposite side of the neck, and was treated in a similar manner. The cough and dyspnœa subsided, and for a time, at least, this dangerous disease has been suspended. I lately visited the child to ascertain its present state.

It appeared lively and in good health. It still has a sore behind the ear, which discharges considerably, and which I have desired the mother to keep open.*

Believing, as I do, in the general inefficacy of every mode of treatment, after the disease is completely formed, it has impressed the necessity of a resort to proper treatment as soon as the slightest symptoms are evident. In confirmation of this, it may be observed, that I have been twice called to another child of S. M. with dyspnœa and some cough, and the progress of the disease was checked each time by maintaining a discharge from blisters† on both sides of the thorax. Here the agency of art in suspending symptoms seems apparent. In the cases of Hetty Killen and R. W.'s child, the physician was only the patient attendant on the operations of nature.

Reasoning from these two last mentioned cases, would it be too hypothetical so far to imitate nature in our practice, as to endeavour, in the very commencement of this formidable disease to produce tumefaction and suppuration in the glands about the neck and on the thorax near the axilla, where, in the former especially, external scrofula is so generally seated.

I confess it has been so clear to my mind that I made the proposal to a poor woman in the incipient state of phthisis pulmonalis, whose case appeared peculiarly favourable for such a practice; because from her own account she had suffered in the early part of her life very severely with scrofulous sores about her neck, which had for a long time resisted the skill of several very respectable physicians; but she declined a compliance.

Would this attempt to excite disease in these parts, which (if the expression be allowable) external scrofula chooses for its seat, be more irrational than the application of sinapisms to the lower extremities in irregular and retrocedent gout?

To conclude, may I be permitted to inquire whether the good old practice of issues and setons has not fallen too much into disuse. Do not the spontaneous cures of pulmonary consumption which sometimes occur, very forcibly inculcate their utility?

Philadelphia, 6th month, 4th, 1811.

* This little patient died afterwards with cholera.

† This child has since fallen a victim to the disease.

SELECTED REVIEWS.

Essay on some of the Stages of the Operation of Cutting for the Stone. Illustrated with an Engraving. By CHARLES BRANDON TRYE, F. R. S. 8vo. London, 1811. pp. 49. Callow.

[From the Medical and Physical Journal for July, 1811.]

THE objections which have lately been urged against the employment of the *Gorget* in Lithotomy, and the recommendation of the *Scalpel* for dividing the integuments, muscles, urethra, and prostate, have induced Mr. Trye to become the advocate of the former instrument. The objections to the *Gorget* are distinctly stated from Mr. Allan's publication; and to each objection Mr. Trye annexes an answer.

"Obj. 1. 'The beak of the gorget is apt to slip from the groove of the staff, before it reaches the neck of the bladder. This has often happened in the hands of good operators, and assuredly will happen.'

"Answ. If this happens, the staff and beak of the gorget must be both very ill made, or the surgeon must enter the urethra too soon, for instance, in the bulbous portion; whereas, he ought never to pierce that canal but in the membranous portion, and within half an inch of the prostate gland; and as then the gorget will not have more than the third of an inch to traverse, before it comes to the prostate, it will scarcely lose its way in this distance, and in the hands of a good surgeon the handle of the gorget is always depressed, in proportion as he depresses the handle of the staff."

"Obj. 2. 'If the operator presses his gorget onwards too horizontally, the prostate gland, being movable, will recede, the gorget slip from the groove, and be driven between the rectum and the bladder.'

"Answ. It is here assumed that the surgeon operates with a very dull edge to his gorget; whereas it should always make its way as easily as a scalpel would do; as will be the case, if its shape be good and its edge keen and smooth."

"Obj. 3. 'If the surgeon, or assistant, depresses the handle of the staff too much over the right groin, with the idea of

making its bend or heel be distinctly felt in the left side of the perineum, the point of the staff will slip out of the bladder, and when the surgeon has completed his external incisions, it will start through the membranous part of the urethra; and, in this case, pushing his gorget by this false guide, he will drive it between the bladder and rectum.'

"Answ. If the staff be started through the membranous part of the urethra, it will also misguide the knife of the operator, so that this is no specific objection to the gorget, but only to an awkward surgeon, using an ill contrived staff, and having an awkward assistant. However, I hope I have freed the staff from being liable to its share of this censure."

"Obj. 4. 'It is uniformly acknowledged by the best surgeons, that the gorget cuts the prostate gland very imperfectly. Its incision sometimes admits, with difficulty, the introduction of the forceps; and if the stone be large, is quite inadquate to its extraction, without dreadful laceration.'

"Answ. If the gorget does not divide the prostate sufficiently, the fault is in its make, not the principle of using it. It is not necessary nor expedient that the wound, through which the stone is to pass from the bladder, should be of the same length as the longest diameter of the stone.

"Sir James Earl has given plates of the very large stones which he has successfully extracted after using the gorget; and larger than those will rarely occur to any operator; and after all, if the surgeon finds he has a stone too large to be extracted without dreadful laceration, he can enlarge the wound of his gorget by his scalpel, just as well as if he had never used the gorget at all; for we cannot suppose, that a prudent surgeon, even if he confines himself to the knife, will make his incision with his knife of the greatest possible size, before he has ascertained that the stone is of an extraordinary magnitude; which he cannot certainly do, till he has got his forceps and finger into the bladder. Neither the staff, nor feeling through the medium of the rectum, will enable him to ascertain the size of the stone."

"Obj. 5. 'If the cutting part of the instrument be made broad, to provide against the last accident, it enters the pubis with great difficulty, grates the bone, by which the pubic artery

is sure to be wounded, and the patient brought into great danger by the hemorrhage, which commonly proves fatal.'

"Answ. I admit the objection; but I should be sorry to see any surgeon operate with a gorget, which justified the expectation of its doing so much mischief."

"Obj. 6. 'Whenever the gorget enters the bladder, the patient feels an irresistible inclination to bear downwards, by which the fundus of the bladder is pressed against the point of the instrument; and if it be kept long in the bladder, to serve as a conductor to the forceps, this generally happens.'

"Answ. I never felt this descent of the fundus in using the prostatome; and my finger has always been so instantaneously introduced along its channel, that it could not have happened without my perceiving it: and, as I never keep this instrument long in the bladder, nor use it as a conductor to the forceps, at all events, I obviate in practice this part of the objection, whatever its force may be."

"Obj. 7. 'It is possible for a rash surgeon to push the gorget on with such violence, as to transfix the bladder.'

"Answ. There is no guarding against the mischiefs of rashness, whether a man use the knife or any other invention. However, if a square stop terminate the groove of the staff, as in that which is here delineated, it must be a very rash surgeon indeed, using a very strong hand in a very violent hurry, who, notwithstanding this defence, can pierce the opposite side of the bladder."

"Obj. 8. 'When the gorget has been successfully introduced into the bladder, and all these dangers have been avoided which we enumerated, unless the operator be very careful in withdrawing it in the very position in which it enters, it will make another incision.'

"Answ. This accident is very effectually prevented by me, and, I suppose, by all operators who do not introduce the forceps on the gorget, by withdrawing it with its cutting edge under the fore finger of the left hand, which certainly keeps the bladder from coming in contact with it, while the instrument is being withdrawn by the right hand."

"Obj. 9. 'No man of feeling ever witnessed the *plunge* of

the gorget, when *driven* into the bladder, without horror, or did it without reluctance.'

"Answ. To this appeal to our sensibility I must briefly reply, that the gorget, or whatever instrument be used, should never, in its introduction, excite the idea of *driving* or *plunging*. The operator should carry forwards his instruments as coolly, deliberately, and with as much manifest command of his hand, as he would in bleeding over the basilic vein, with the artery placed immediately under it."

The character, extensive practice, and success of Mr. Trye, give considerable value to his opinions, which are unequivocally in favour of the gorget, the form of which, however, he has altered in some particulars, and has described the altered instrument under the name *prostatome*. A plate renders this description perfectly intelligible, as well as some peculiarities in the staff and forceps which Mr. Trye uses in his operations.

Having thus replied to the objections brought against the gorget, the advantages said to arise from employing the scalpel exclusively are examined.

"Is it probable," Mr. Trye asks, (p. 16.) "that the prostate will be divided with equal precision, as to direction and dimensions, and that the adjacent parts will be equally protected, if we reject every instrument besides the scalpel? I know before hand the size of the wound which the prostatome produces, and by observing the relative position of the staff, in what direction it will be made. For as the handle of the staff is inclined more or less to the right groin of the patient, so will the wound in the prostate deviate, more or less, from a right angle with the wound in the urethra. How many surgeons are there, possessed of such a delicacy of touch as to conclude the work with the knife, with equal exactness? The knife cannot here be directed by the grove of the staff, as it is, in other cases by the groove of the common director. For the staff, in dividing the prostate, is merely a goal from which the knife must set out, and to which it is to return. During the immediate act of dividing, it must move at some distance from the staff; that is to say, if the prostate be cut by a wound, forming more or less a right angle with the wound through the integuments, muscles, and urethra, which, to ensure the safety of the rectum,

must be always done. Mr. Allan's description of the operation by the knife alone, as well as his plate of the lateral incision of the prostate, demonstrate the correctness of my statement. *(See Allan on Lithotomy.)*

"'Tis true that, in the living body, the feel of the prostate is very different from that of every thing beside in its vicinity; and every part of it may be distinguished by an experienced touch. But the finger will rarely have attained that advantage the first time the surgeon is called to cut for the stone; it cannot have acquired it by exercise on the dead body, in which the feel excites a different sensation from what it does applied to living parts. Whereas if a surgeon, having that anatomical knowledge, without which no man deserves the name of a surgeon, is cool and steady, and in the habit of using instruments, and attends to rules, he will, in his first operation,* equally as in subsequent ones, make his way correctly into the bladder. He is guarded against wounding the rectum, vesiculæ seminalis, and seminal ducts, all exposed to injury, even from the most skilful hands, provided with the knife alone."

"There are two circumstances which appear very unfavourable to cutting with the knife alone: the patient being a very large and tall man, and the patient being a very small child. I have this day, March 8th, 1809, operated on a very tall man, sixty three years of age, and while I was dividing the urethra, I paid particular attention to the prostate. I am convinced, though I am tolerably accustomed to the use of the knife, and not very deficient in anatomical knowledge, that if I had attempted to have divided the prostate with the knife, I should have certainly been embarrassed by the great depth of the prostate, nor have perfected my task with accuracy.

"As, in early childhood, the prostate is too small to be felt, we want its guidance as to the situation and extent of the incision to be made by the knife. Whereas by our previous consideration of the size, and other circumstances of the prostatome, we can predetermine the situation and dimensions of the finishing wound."

* If he employs the prostatome, we presume the author means.

We shall conclude our analysis of this short pamphlet with quoting from it the following singular case of *Ischuria Vesicalis*, subsequent to lithotomy.

"A farmer seventy-five years of age, six feet in height, having been long afflicted with a stone in the bladder, in other respects in good health, submitted to lithotomy last November.

"The stone was small, and was extracted without difficulty. He was free from unusual pain till the second night, which he passed very uncomfortably, by reason of severe pain about the wound and along the urethra; the following day it was worse, and extended even to the hypogastric region. From circumstances, it was evident that he was free from peritonitis, but that the bladder was suffering from being distended with urine. A female catheter being passed through the wound, did not reach the retained water: a caoutchac catheter was then introduced by the penis, and came out again through the wound: a male silver catheter, in the common way, drew off a large quantity of urine. The same instrument was had recourse to twice or three times a day for a week, and then a caoutchac catheter being introduced with ease, a plug was inserted in its mouth, and withdrawn once in two or three hours, to discharge the urine. Thus went on the second week; after which the catheter was finally withdrawn: then the urine again issued through the wound. In a short time it began again to flow through the penis; in six weeks it all came that way; and he was able to leave Glocester the seventh week, though the wound was not entirely healed. This is the only instance which I ever knew or heard of in which ischuria vesicalis occurred during the cure of the wound made by lithotomy."

The American Mineralogical Journal, for January, February, and March 1810, *conducted by Archibald Bruce, M. D., Professor of Mineralogy in the University of the State of New-York.* Vol. I. No. I. 8vo. pp. 62. New York, 1810.

[From the Edinburgh Review, or Critical Journal, for Nov. 1810.]

At a time when the science of mineralogy is rapidly advancing in favour and consideration among the academicians of Europe, we open, with uncommon interest, a volume which announces its dawn in America. Dr. Bruce, the editor of the Journal now under consideration, thus makes known the plan and purpose of the undertaking.

"The object of this work is to collect and record such information as may serve to elucidate the mineralogy of the United States; than which, there is no part of the habitable globe which presents to the mineralogist a richer, or more extensive field for investigation.

"Of the utility of a publication of this kind, much might be said. It may, however, be sufficient to observe, that nothing has contributed more to increase and diffuse mineralogical information, than the periodical works on the Continent of Europe, particularly those in Germany and France. At the present period, when such laudable exertions are making to improve and extend the manufactures of our own country, a knowledge of the mineral productions, on which so many of the useful arts depend, and with which nature has so liberally supplied us, becomes particularly desirable.

"In order, therefore, that the design may be carried into effect, communications from those gentlemen who may have directed their attention to this interesting branch of science, are respectfully solicited, particularly such as may relate to the geology and mineralogy of particular districts; the history of mines, their products; methods of reduction, and improvements in metallurgy generally; descriptions of individual specimens, their constituent principles, localities, and uses to which they may be applied; mineral waters, their situation, analysis, and use in the arts, and in the cure of diseases, &c.

A part of the work will be appropriated to such information as may be derived from foreign and domestic journals.

"A number will be published quarterly."

Though we have infinite veneration for the privilege which exempts all periodical, and especially all quarterly publications, from the jurisdiction of reviewers, yet we hope to be excused for this one encroachment on it, in the case of a transatlantic journal, wholly dedicated to science, and of which we have nothing but what is favourable to communicate.

The first article contains the description of some minerals collected during a tour to Niagara in 1809. It is written by Dr. Mitchel, professor of natural history and botany. Among all the methods adopted for the purpose of conveying mineralogical knowledge, perhaps there is no form of composition more pleasing than that of a catalogue *raisonné*. It was this which gave such popularity to the work of Baron de Born, published at Vienna in the year 1790, one of the most useful and entertaining treatises by which mineralogy, in its infancy as a science, was illustrated. Baron de Born's enumeration, however, possessed the advantage of embracing a system for the classical arrangement of the specimens he described. Dr. Mitchell's communication to the American Journal, offers merely a descriptive catalogue of certain minerals found in the region of Niagara, and along the banks of the Mohawk river. The two first words of it bespeak a foreign idiom, characterizing, as might be expected, the Anglo-American language, in which this Journal is written. The author begins by saying, "*These pieces* were collected during a tour in the summer of 1809;" and soon afterwards, describing a specimen of black flint, he adds, "such as abounds in the Seneka *prairies*." Other examples, proving the alteration to which our language has been exposed, chiefly by the introduction of *Gallicisms*, may be noticed in the rest of the Journal; resembling expressions found in American newspapers, where, for "*a ship taken*," we read of "*a ship captivated*." So much for the style. It now remains to say a few words concerning the system patronized by the mineralogists of New-York, previous to our further examination of the contents of their Journal.

It is a fact, too well known to require illustration, that the

mineralogists—of Europe at least, are divided into two contending sects, the followers of the French, and of the German professors. The latter, with Werner at their head, are at all events the most active and stirring; and like the *Methodists* of the day, make every thing subservient to the propagation of their opinions. They preoccupy the public journals by their notions and nomenclature; tamper with the dealers; compose *gratis* catalogues for public auctions; confederate with chemists; intrigue for the appointment of their own pupils to public stations;* form societies; distribute prizes; and carry on a correspondence with every country in which mineralogy is cultivated. We must not be surprised, therefore, if we find the earliest appearance of the science in America, partially, although slightly, obscured by their influence. The general aspect is however good; and we may venture to hope, that, as the light increases, the fogs will dissipate. In our opinion, the advancement of mineralogical knowledge will be found commensurate exactly with the distance to which it leaves the unintelligible jargon of of the "*Oryctognosie*" of Freyberg. Much has been lately effected by the exertions of our own professors; and, more than all, by the wholesome exposition and pointed ridicule of the celebrated Chenevix, who, having acquired an indisputable title to pass judgment on the plan of instruction adopted by Werner, by having himself attended during his whole course of lectures, published his renunciation of the German system, and its utter inadequacy to purposes of science.

To return, therefore, to the immediate object of discussion. Dr. Mitchell's list of minerals extends only to twenty-four substances. The two first are specimens of slate and fetid limestone, from the falls of Niagara. In describing the third, a crystallization of the carbonate of lime, he says the angles of the rhomboidal crystals "are all oblique." We are at a loss to conceive any other than "oblique angles" of a rhomb. The nature of the fourth substance is not ascertained. The fifth is pronounced to be "calcareous rock, *carrying* crystals resembling

* If we are not misinformed, the valuable collection of Mr. Greville, now in the British Museum, narrowly escaped a classification into "floetz traps, transition grünstones," and a thousand other fine things, equally unknown to the collector, through the zeal of the *geognosists* who had found their way into that magnificent repository.

dog-tooth spar." The sixth, a piece of the same rock, "*charged* with iron pyrites." This is said to be very valuable, because "it contains that link in the chain of evidence which demonstrates the conversion of common limestone into gypsum." We know not "the chain of evidence" to which allusion is here made; but almost all gypsous deposits, where crystallization has not taken place, exhibit this appearance; being a result of the disintegration of preexistent strata, and therefore often containing the broken remains of those animal impressions which characterize secondary limestone. The fifteenth substance described, must be peculiarly interesting to *Caledonian* students. It is "native *sulphur*, from the Clifton Springs;"—"wagon loads of which precious mineral," Dr. Mitchell assures us, "lie on the surface of the ground!" And a little further on, he bears new and grateful testimony to the salubrious effects of that invaluable substance, both upon vegetable and animal bodies. "The moss in the neighbourhood of the "fountains is completely encrusted with it. The water of these "copious springs lets fall the *brimstone* freely on every thing "it touches; but plants *are not at all injured by it.* They appear "to vegetate *perfectly well*, and without sustaining the smallest "inconvenience. Various *animals live in it.* Horses and cattle "drink it freely, like common water."——The other substances do not require any notice; excepting the last; which is described as "an uncommon association of amianthus, graphite, and quartz."

The second article is by Colonel Gibbs. It contains observations on "the Iron-Works of Franconia, in New-Hampshire," a mountainous tract of country, eight miles east of Connecticut river. The ore is the *fer oxidulé* of Haüy. It is similar to that which is found in Sweden; and also occurs, similarly associated, in "gneiss, alternately with granite and primitive greenstone."

The third article is from the pen of Dr. W. Meade, "A Description and Analysis of an Ore of Lead, from Louisiana." This mineral resembes metallic lead in color and lustre. Its brilliancy is said to be greater than the generality of those ores which bear the name of galena; yet, as its chemical analysis proved it to be nearly a pure sulphuret, and both its crystallization

and fracture exhibited the cubic form, the difference can hardly be sufficient to separate it from those varieties. Le Sage formerly described an appearance of galena which was almost malleable. The ore analyzed by Dr. Meade, notwithstanding its resemblance to metallic lead, is very brittle; and its specific gravity 7.50.

The fourth article contains "A Geological Account of Dutchess County in New-York," by Dr. Samuel Akerly, who notices the improvement which has taken place in agriculture, of late years, owing to the introduction of *gypsum* as a manure. He decribes the mountains on the east side of the Hudson river, as consisting of masses of *granite*, occupying a region of three hundred square miles. Very few of these mountains exceed a thousand feet in elevation above the surface of the river. They abound in ores, which are said to present themselves on the very surface of the earth. Iron is the principal metal which has been extracted and worked; but tin is also noticed. To the north of this mountainous district, occur slate and limestone; neither of which substances exhibit vegetable or animal impressions; and are therefore described as of primary formation. Dr. Akerly's communication concludes with some ingenious observations upon the mineral waters in that part of America, in which he detected the presence of carbonic acid gas—of sulphuretted hydrogen—of lime—and of sulphuric acid.

"A Chemical Examination of Heavy Spar, from New-Jersey," by Mr. George Chilnton, succeeds the observations of Dr. Akerly. The mineral was found on a branch of the Delaware, by some farmers, who mistook it for gypsum; and used it as manure. It was not found, however, to possess any remarkable fertilizing quality.

The sixth article of the journal again introduces Colonel Gibbs, with "a Mineralogical notice respecting the *West River Mountain*"—Connecticut river. This mountain having been announced in the American Geography, and in the Annals of the American Academy, as volcanic, he had the curiosity to visit it. Instead of the crater of a volcano, however, he was sorely disappointed to find only the shaft of an old iron mine; whence hæmatite iron ore had been extracted, and exhibited

as lava! The mountain itself is of granite, and gneiss. To this succeed the observations of Mr. John Griscom upon "a mineral water, from Lichfield, in the state of New-York," written with great diffidence, but evincing, in a very eminent degree, the chemical knowledge requisite in the investigation. The Lichfield springs have long been resorted to by the neighbouring people, as extremely salutary in many cases of cutaneous disorder. According to Mr. Griscom, their principal saline ingredient is sulphate of lime. This substance, with a considerable quantity of hydrosulphuret, and a small portion of carbonate, may be considered as constituting the chief soluble matters in those waters, independently of their gaseous contents, a portion of which is sulphuretted hydrogen.

The next article will perhaps be considered as more interesting than any other. It relates to the discovery of native magnesia in New Jersey; and is written by the editor of the journal, Professor Bruce; who has also transmitted specimens of the mineral to this country. It is found in a very advanced state of crystallization; and, externally viewed, somewhat resembles the talc of Mount St. Gothard; but with more of the sparry lustre which characterises apophyllite. It consists wholly of magnesia combined only with its water of crystallization, in the proportion of seven to three. As it is perhaps the only mineral substance known which can be considered exhibiting magnesia, in a state of perfect purity, the observations concerning it, and its description, shall be given in the Professor's own words.

"Although Magnesia enters into the composition of many mineral substances, yet its existence in the mineral kingdom, in an uncombined state, has, till within these few years past, been unknown.

"Brogniart, in his mineralogy, has decribed several minerals under the name of Magnesite (a term he has introduced as expressive of the large quantity of magnesia they contain,) in some of which, magnesia appears to exist in a pure state. Of those which approach nearest to native magnesia, are the magnesites of Piedmont, as described by Giobert in the Journal des Mines, particularly the variety from Castella Monte. Although this mineral, as analysed by Guyton de Morveau, afforded a large proportion of carbonic acid, yet it appears, from the asser-

tion of Giobert, that, when first taken from the quarry, it contains no carbonic acid, but that it absorbs it after being two or three weeks exposed to the atmosphere.

"The magnesite from Boudissero, which is near Castella Monte, contains, in the hundred parts, according to Giobert, 68 magnesia, 12 carbonic acid, 15 silex, 2 sulphate of lime, and 3 of water. This, like the magnesite from Castella Monte, he thinks, obtains its carbonic acid from the atmosphere.

"The magnesites from Vallecas in Spain, and Salinelle in France, contain no carbonic acid: they, however, all have a large proportion of silex. That of Salinelle, according to Vauquelin, contains 55 parts in the hundred.

"Brochant mentions as native magnesia, a substance found at Robschuts, in Moravia, by the late Dr. Mitchell of Dublin, which according to Dr. Mitchell's analysis, and that of Professor Lampadius, contains nearly equal parts of magnesia and carbonic acid. Why this mineral is described as Native Magnesia, I am at a loss to determine; unless, like those of Giobert when first discovered, it contained no carbonic acid, but absorbed it after exposure to the atmosphere.

"At Hoboken, in New Jersey, on the estate of Mr. John Stevens, is found a mineral, which presents the following characters.

"Colour, white, passing into greenish white.—Lustre, pearly.—Structure, foliated; the folia or leaves frequently having a radiated position.—The folia, when separate, transparent; in the mass, semitransparent; the surface, after exposure to the weather, becoming opake.—Somewhat elastic.—Adheres slightly to the tongue.—Soft.—Powder, pure white.—Specific gravity, 2, 13.—Before the blow-pipe, becomes opake and friable, and loses weight.—Soluble in the sulphuric, nitric, and muriatic acids.—This mineral occurs in veins from a few lines to two inches thick, traversing serpentine in every direction." p. 26—28.

Then follow the Analytical Experiments by which the Professor ascertained the nature of the substance under his examination; for which, want of room compels us to refer to the journal.

The ninth and tenth articles contain mineralogical notices respecting "Phosphates of lime and lead," from Pennsylvania

—"Melanite," from the same country—and "Amber" from New Jersey; the first by Mr. Godon; and the second by Mr. Charles Wister. The apatit accompanies beril-emerald; the phosphate of lead is found in veins of pyritous copper. Melanite, according to Mr. Wister, occurs in the district of Germantown, six miles northwest of Philadelphia, in a matrix of "gneiss reposing on granite." Its crystals are of a velvet black color, varying from the size of a pin-head, to one inch in diameter. "Through the granite of Germantown, crystals of tour-"maline, mica, phosphate of lime, and beril, are universally disseminated; but melanite has been found only in one place." Amber is found *in grains* upon *wood coal;* and, from the description given by Mr. Wister, its appearances resemble specimens we have seen in Copenhagen, said to have been brought from Greenland.

The last article relates to American fluates of lime, which are said to be rare in the country. This also is from the pen of the editor. Professor Bruce describes three different appearances presented by the mineral from New Jersey, from Connecticut, and from New Hampshire. The rest of the journal, (about half the first Number of Vol. I.) is appropriated to the review of mineralogical publications; to intelligence received from other parts of America, and from England; and concludes with an Appendix, extracted from the Transactions of the Royal Society of London, concerning the identity of Columbium and Tantalium, as announced by Dr. Wollaston, secretary to the Society. The review notices a very interesting paper, published in the sixth volume of the Transactions of the American Philosophical Society, respecting the discovery of Palladium in a state of combination with gold; by Joseph Cloud, an officer in the mint of the United States. According to Mr. Cloud's experiments, palladium possesses a degree of hardness, nearly equal to wrought iron. It is malleable and very ductile; forming ductile alloys with gold, silver, and platinum; and is characterized by properties which entitle it to a place among the noble metals. Mr. Cloud has, moreover, been extensively engaged in experiments upon rhodium, which he has obtained in great purity from the ore of platinum.

We shall here close our analysis of this curious publication;

no part of which can be deemed unworthy the attention of the public. To the mere mineralogist, it is peculiarly gratifying; because it opens a new source of instruction, and a field of research, whose limits are incalculable. But science is still so new in America, that all who take any concern in its general progress, must greet the approach of such a stranger, even though they feel no peculiar interest in the errand on which he has come. His speech and manners,—even the very dress that he wears,. naturally excite our curiosity, and enable us to draw inferences as to the condition of his country. A number of little circumstances, of which the editor was most probably himself unconscious, became, in our eyes, characteristic and important. We are struck, for instance, by the neatness and accuracy of the American typography; and the taste displayed in the plan and form of the work;—nay, even the advertisements printed upon its cover, afford us some insight as to the peculiar direction in which literature is destined to make its progress among our transatlantic brethren. In this point of view, we cannot avoid noticing *the air of business* which seems to play about every thing American.—Chemistry, in which they seem to have made greater advances than in mineralogy, always appears among them in connexion with some useful and gainful occupation. They have not yet found leisure to pursue it as a science of amusement. It is therefore studied only with a view to improvements in the arts of preparing cements and manures, dyeing, bleaching, distilling, purifying infected air, tanning and currying leather. These are the topics to which the chemical books, published or imported, principally refer. Other works advertised, are chiefly medical and chirurgical journals. Then the wholesale commerce carried on in these articles,—and their booksellers' shops passing under the name of "*Book Stores*," all conspire to present us with new and peculiar views of the infancy of western science. In many of its departments this business-like accuracy and method may be found very serviceable—and in none more than in that which is the subject of the work now before us. Its execution, we think, upon the whole, very respectable; and look forward, with an eye of expectation, as well as curiosity, to its promised continuation.

An Analysis of a Paper on the Phosphorescence of different Bodies, by Mr. Dessaignes, read before the National Institute in 1810.

[Translated for the Eclectic Repertory.]

The class of natural philosophy and chemistry offered a prize for the examination of the circumstances and causes of phosphorescence in different bodies, that is to say the luminous appearance exhibited by certain bodies, whether spontaneously or excited by friction, or slight degrees of heat, or any other means distinct from combustion.

This prize was obtained by Mr. Dessaignes, principal of the college at Vendome; and the work to which the prize was adjudged at the public meeting last year, has been followed by similar experiments, which have greatly extended the facts.

This philosopher defines phosphorescence "an appearance of light durable or fugitive, unaccompanied by sensible heat, and not followed by any alteration in unorganized bodies," and he classes the phenomena under four heads, according to the occasional causes. 1st. Phosphorescence from elevation of temperature. 2d. Phosphorescence from insolation. 3d. Phosphorescence from collision. 4th. Spontaneous phosphorescence.

All bodies phosphorescent from elevation of temperature, powdered and thrown on a heated stand, become luminous whatever may be the conducting power of the stand for caloric, and the intensity of the light is in the direct ratio of the degree of heat, but the duration of the phosphorescence is always in the inverse ratio of this temperature. The last portions of light are more forcibly retained than the first, and there is in this respect great diversity in different bodies. Vitreous bodies part with their phosphorescence very slowly; while the metals, their phosphorescent oxides, and the metallic salts lose it very quickly. No degree of heat can remove the phosphorescence from lime, barytes, strontian slightly slacked, magnesia, alumine and silex. Under certain circumstances, in a moist atmosphere for instance, some of these bodies will resume their phosphorescence, whilst others will not.

This phosphorescence assumes different aspects, and like the

solar light is decomposed by the prism: it escapes in gentle emanations from some bodies, from others in scintillations; the color is blue, but generally dusky from bodies containing iron. Its purity can however be restored by depriving them of the metal which had altered its color.

In general it appeared to Mr. Dessaignes, that the most phosphorescent bodies are those which contain in their composition principles that must have passed from the gaesous or liquid state to that of a solid.

It was of importance to determine if this phosphorescence from elevation of temperature was owing to combustion. With this view Mr. Dessaignes made his experiments in atmospheric air, oxigen, and the torricellian vacuum, without observing any difference in the intensity of light from unorganized bodies; but the light from organized bodies was increased in oxigen; whence the author infers that in these bodies the phosphorescence is partly occasioned by combustion.

But an elevation of temperature does not render all bodies luminous, and those which acquire phosphorescence from this cause, lose the property under certain circumstances. On what cause then does inphosphorescence depend?

Such is the question proposed by Mr. Dessaignes, for the solution of which he repeated his experiments, introducing such circumstances as favoured his views. His researches have led to the following results. 1. That the products from fire are not luminous unless the bodies have passed from an earthy state to a state of vitrefaction. 2. Bodies having the water of crystallization in excess afford no light. 3. Bodies capable of being softened by heat likewise afford no light. In this condition are the salts with excess of acid, the boracic salts excepted, they not being melted at the degree of heat employed in these experiments. 4. Bodies and particularly salts which are volatilized, or decomposed at this degree of heat are not phosphorescent. 5. And lastly, bodies mixed with a large quantity of the metallic oxides are likewise completely obscure.

Nevertheless most of these bodies may become luminous on being moistened, provided they possess the property of combining with water, and of rendering it to a certain degree

solid. In short, this property may be restored to those bodies that had lost it, on their condition being changed.

Mr. Dessaignes concludes from his experiments, of which we have only been able to indicate the result, that the phosphorescence produced by an elevation of temperature, is owing to a particular fluid driven by the caloric from the bodies between whose particles it exists; and he considers this fluid to be the same as electricity. He entertains this hypothesis, because the circumstances which favour or destroy the accumulation of the electric fluid in like manner favour or absolutely destroy the accumulation of the phosphoric fluid in the same bodies, and that because electricity may be directly accumulated in bodies so as to render them luminous.

It had long been known that the exposure of certain bodies to light rendered them phosphorescent. Dufay and Beccaria had made experiments on the phenomena of this kind, and from the experiments of the latter it was inferred that the phosphorescence of bodies exposed to light arose from the disengagement of the light which had been introduced by a species of absorption. But the experiment on which this hypothesis is framed has been ascertained by Mr. Dessaignes not to be correct: the phosphorus which he subjected to the different prismatic rays always afforded the same kind of light. Moreover the phosphorescence produced by insolation, far from being an emanation of rays, is only an oscillation; for however frequent the insolations, the phosphorescence is not increased, and the covering the phosphorescent body with smoke will render it obscure. Light as well as heat does not render all bodies phosphorescent, and those which are, are not so in the same degree. The Canton phosphorus becomes phosphorescent by the light of the moon, while the hyalin quartz shines only by the immediate light of the sun. In general all fluid bodies are insensible by this kind of excitation, which is the case with charcoal, the carburet of iron and other metals, most of the sulphurets, the metallic oxides in the dry way, and in general all bodies which like the foregoing are conductors of electricity; but the edio-electric may become phosphorescent by means of a strong light. It ought to be observed that in

respect to the phosphorescence all bodies exhibited the same effects with electricity as with light.

The light produced by insolation and by heat have the same color, and both are equally affected by the metallic oxides.

Bodies the most luminous by insolation cannot be rendered so when heated; but they become phosphorescent in proportion as they cool, and some bodies which have lost the power of shining by an elevation of temperature become luminous by insolation, which Mr. Dessaignes attributes to the water retained in these bodies; for water has unquestionably great influence in these phenomena, as Mr. Dessaignes has in several places remarked.

The light produced by many bodies known by the name of phosphorus has been ascribed generally to combustion. Mr. Dessaignes being desirous of examining this hypothesis, subjected these bodies to experiments which according to him evidently prove that they owe their light to the same cause, to wit, a species of electricity; for Mr. Dessaignes considers the light produced by irradiation and electrising the same as that afforded by an elevation of temperature; only that in the two first instances the light experiences a kind of vibration, while in the last it is really expelled.

Mr. Dessaignes made the phosphorescence by collision the subject of several memoirs. From his experiments the following general and very remarkable law is established; that all bodies whether solid, fluid or gaseous afford light by compression. But this light is not so abundant when the body has been rendered phosphorescent by heat; and however frequent and strong the compression, they cannot be entirely deprived of their phosphorescent property. Mr. Dessaignes thinks that this light depends on a different cause from that produced by heat. "It appears to depend," says he, "upon a very elastic "fluid closely united to all the elements of gravitating matter. "This fluid, the primary source of expansion, is pressed out "in proportion as the constituent particles of matter approach "each other, so that it is farther from the limits of compression "in gases than in vitreous bodies; and in the latter a less effort "is required to excite the oscillations, &c."

Mr. Dessaignes distinguishes two kinds of spontaneous phosphorescence, the one fugitive;—the other permanent. Among the former may be classed those produced by the union of a certain portion of water and quicklime, and among the latter rotten wood, and other bodies in a state of putrefaction. The latter particularly engaged the attention of Mr. Dessaignes. His observations were made on animal substances, fresh water and sea-fish, on vegetable matter, and the different kinds of wood. These substances individually presented distinctive characters, but from their united phenomena it appears that their phosphorescence is a species of combustion in which water and carbonic acid are formed; all the parts constituting muscle or wood do not contribute to the production of light in these bodies; the woody and muscular fibre undergo no essential change, and the phosphorescence of these bodies is owing in wood to the glutinous principle and in muscle to the gelatinous principle uniting their respective fibres.

From the numerous facts collected respecting spontaneous phosphorescence, Mr. Dessaignes endeavours to explain the phosphorescence of the sea, which he thinks may be owing to two causes. 1. The presence of animalculæ, phosphorescent by the emanation of luminous matter secreted by the animalculæ. 2. By the mere presence of matter dissolved or mixed in water and proceeding from these animals, or fish and the mollusci, &c.

Since the publication of his first work, Mr. Dessaignes has extended his inquiries; and has attempted by numerous experiments to determine the influence of points on the phosphorescence, whether from elevation of temperature, or from insolation; and he not only ascertained that the points have the same effect on the phosphoric fluid as on the electric; but moreover that natural bodies differing only in the aggregation of their particles, may admit of infinite variety as regards their phosphorescent property, &c.

An additional Account of the lythontriptic Power of the Muriatic Acid, with an Analysis of the calculous Matter discharged in one Case, during its Use; also an account of the lythontriptic Power of the nitrous Acid, with an Analysis of the calculous Matter discharged in a Case during its Employment. By PETER COPLAND, Little-Bytham, near Stamford.

[From the Medical and Physical Journal for May, 1811.]

THE attention of Mr. Copland to the lithontriptic properties of the muriatic acid, was first excited by cases of its successful employment, related in the fifth and sixth volumes of the Memoirs of the Medical Society of London.

The cases here detailed afford sufficient evidence to induce a further trial of the muriatic and nitrous acids in calculus. In the first, thirty drops of the muriatic acid were taken in water three times a day; the dose was gradually increased to fifty drops, and continued till two ounces were taken, when the complaint was removed. The patient was directed to collect daily, in one vessel, all the urine which could be obtained in twenty-four hours. The clear urine was then poured off, and the sediment collected upon a paper filtre. The sediment thus collected amounted to 104 grains, of a buff coloured impalpable powder.

One hundred grains of this powder subjected to chemical analysis, was found to contain

	Grains.
Uric acid	72
Ammonia	18
Carbonate of lime . .	3
Phosphate of lime . .	5
Loss	2
	100

In the other case, (that of Sir Simon Kelly, of Colsterworth, Lincolnshire) forty drops of the diluted nitrous acid were taken in water every two hours, till a sediment appeared in the urine; and afterwards continued four times a day, while necessary. Twenty-seven ounces of the diluted acid were used. A sedi-

ment soon appeared, and by persevering with the medicine from November 12, 1805, to April 20, 1806, 600 grains of a light thick coloured powder were collected; in which, toward the conclusion, a few fragments of calculus were found, partially decomposed. One hundred grains of this sediment, subjected to analysis, gave

	Grains.
Uric acid	80
Ammonia	11
Carbonate of lime . . .	2
Phosphate of lime . . .	1
Loss	6
	100

During the treatment of these cases opium was occasionally given to mitigate pain; costiveness was prevented by mild laxatives; and when the stomach was oppressed by the frequent doses of the acid, it was relieved by taking any convenient spirit diluted water. It appears, from this gentleman's observations, that the *nitrous acid* possesses greater lithontriptic powers than the *muriatic:* and that in many cases of *lithiasis*, it always procured a discharge of sediment with the urine; and a due perseverance in its use was followed by a removal of the symptoms.

Memoirs of the Life of Thomas Beddoes, M. D. with an Analytical Account of his Writings, by John Edwards Stock, M. D. 4to. pp. 413. Murray. 1810.

[From the British Critic for June, 1811.]

In all biographical publications the reviewer must be supposed to have *two* objects before him, the subject of the history, and the biographer. We have in the present work an account of the life and writings of an eminent physician, written by a brother physician of reputation and abilities, and were we to go regularly through the book, in order to present the reader with a critical commentary on its contents, we should have

perhaps nearly as much to say of the historian, as of the person whose history he writes. We do not mean to intimate that Dr. Stock really writes about himself, but in giving an account of the writings, remarks and discoveries of his friend, he intersperses further remarks of his own, so as to render his history a kind of review of Dr. Beddoes's writings and opinions. Now it so happens that almost all the writings of Dr. Beddoes, mentioned in this volume, have already been reviewed by ourselves, nor do we see any particular occasion to alter our opinions, so that in our account of the work before us, we shall have more to do with the man than with the physician and philosopher. The lives of literary men, Dr. Stock observes, seldom supply the biographer with much diversity of incident; we are bound, however, at the same time to acknowledge, that what they may want of this popular attraction, is for the most part likely to be compensated by the importance and utility of the researches and occupations to which such persons may have devoted their time; and from the nature and character of the particular pursuits in which Dr. Beddoes engaged, we are very ready to admit, that no man's life could well have been more uninterrupted, zealously and enthusiastically applied to the advantage of his fellow creatures, than that of the learned person here preserved from oblivion. In saying this, we lay out of the question, the actual utility and consequences of his labours and researches; were they to turn out ultimately of no account at all to mankind in general, the Doctor would still deserve the fair praise due to every one who bestows his time and attention wholly upon pursuits so intimately and immediately connected with the welfare, happiness, and good of his brethren. We think it incumbent on us to say this, openly and explicitly, because having before us the testimony of very respectable persons, to the disinterestedness and purity of all his aims and intentions, we cannot regard him in any lower light, than as a most ardent philosopher, and sincere friend of man. We are the more disposed to say this, because in our former reviews of his writings and opinions, we have frequently found occasion to differ from him, and sometimes have been led to espouse the opposite side with an earnestness and warmth of feeling, called for as we then thought, by the strong terms in which Dr. B. himself was wont to assert his own opinions; not

always (undoubtedly,) with that liberality of sentiment and decorum of manners, the want of which he was forward to resent in all cases that applied to himself. He was undoubtedly an eccentric man, but eccentricity may lead to good as well as harm. It is not therefore any positive fault in itself; and it is well to have shown, as the present biographer *has* done, that the eccentricity of Dr. Beddoes always tended towards the good and happiness of man, however attainable; these were the objects he constantly had in view.

The Doctor was by descent of Welsh extraction, though born himself at Shiffnall, in Shropshire, April 15, 1760, where he received the first rudiments of his education, but was soon removed to Brood [or Brewood] in Staffordshire; he very early displayed a thirst for knowledge, and, as is frequently the case, appears to have been determined rather by accident than design, to adopt the line in which he afterwards most distinguished himself. From Brood he was removed to the free grammar-school at Bridgenorth, which he quitted again at the age of thirteen. His manners and habits at school were peculiar. He seemed early to give way to deep thought and reflection, and this, added to a natural shyness of disposition, gave him an air of reserve, which distinguished him from his young associates. In May, 1773, he was placed under the tuition of the Rev. Samuel Diekenson, rector of Blym-hill, in Staffordshire, who supplied the biographer with some particulars of character, highly creditable to him. In 1776, he was removed to Pembroke College, Oxford; here he applied himself with remarkable industry and diligence to the study of modern languages, chemistry, mineralogy, and botany. In 1781, he visited the metropolis, and studied anatomy, under Sheldon. In the course of these studies it was, that he undertook to translate and publish the works of Spallanzani, which appeared in 1784. Dr. Stock is inclined to think he was undoubtedly the person who supplied the notes to Dr. Cullen's edition of Bergman's Physical and Chemical Essays. In 1786, he edited Scheele's Chemical Essays. In 1783, he took the degree of master of arts. In 1784, he went to Edinburgh, where he distinguished himself, not only as a member, but for some time *President* of the Royal Medical and Natural History Societies;

he was highly gratified with his residence at this place. In 1786, he returned to Oxford and took his doctor's degree; in the same year he visited the continent, and became acquainted with various eminent naturalists, &c. It was shortly after his return from the continent, that he received the appointment to the Chemical Lectureship at Oxford, in which situation he certainly distinguished himself much, and was generally attended by a class, not only numerous, but particularly respectable. Mineralogy at this time appears to have occupied much of his attention; his Theory of the Earth, Dr. Stock tells us, was conformable to that of Hutton, and he was a zealous *Vulcanist*. We know this to have been the case; but we also know, that at this time he was particularly hasty in his conclusions, and would frequently acknowledge that he had been misled in the judgment he had formed of certain fossils, especially in regard to the operations of fire; and we can cite a very remarkable instance of this, which happened very soon after his *first* opinions had been publicly declared and maintained before a large audience.* At this time nothing seemed to interest him more than the account of the Two Giants' Causeways, or groups of prismatic basaltine columns, in the Venetian states, in Italy, in the LXVth Vol. of the Philosophical Transactions, communicated by Mr. Strange, long his Majesty's

* The case was simply this. The writer of this article had brought to Oxford from the summit of one of the mountains surrounding Coniston Lake, in Lancashire, some specimens which had evidently undergone the operation of fire, but which happened to abound near a *hollow* on the top of the mountain, which some *Italian* gentleman had not long before pronounced to be the crater of an extinct Volcano. Upon showing them to Dr. Beddoes, he was so persuaded of the fact, that he even summoned a particular assembly of the members of the University, by an *extraordinary notice*, before whom he delivered a long lecture on the specimens supplied, as indicative of the natural operations of fire in those parts of England. A very short time after, the writer of this article having reason to think he had changed his opinions, questioned him again about the same specimens, when he protested that they were evidently nothing better than mere flags from some old furnace, and that he had since discovered a criterion by which he could distinguish between the productions of natural and artificial fire, but this discovery, and the consequent change of his sentiments, he could not be prevailed on to announce as publicly as he had delivered his former opinions; in fact, he had engaged in new pursuits, and he concluded the University would discover the mistake without being told of it by himself.

Resident at Venice, a circumstance incidentally mentioned by himself in the work before us, and to which from an acquaintance at the very time, with both the learned persons alluded to, the writer of this article can bear ample testimony.

Many pages of the work before us are taken up with a poetical attempt of Dr. Beddoes in the style of Dr. Darwin, and some discussion is entered into, upon the merits of the latter gentleman's productions. As our opinions upon this subject are stated elsewhere, we need not enter upon it again; Dr. Stock is evidently a great admirer of Dr. D., but he admits, that the public has been much divided in regard both to the Poetry and Philosophy of the celebrated physician and bard of Derbyshire.

Dr. Beddoes' retirement from Oxford, which we believe took place in the year 1792, seems to have been accelerated by his intemperance in politics, occasioned by the remarkable circumstances of the times. Dr. Stock has taken some pains to soften and palliate every thing that was exceptionable in the Doctor's conduct, and to give a fair and candid account of the motives by which he was probably actuated.* It was in the year 1793, that the Doctor removed to Bristol, where he began that career of medical and physiological researches, experiments, and lectures, which made him so generally conspicuous, and which appear to have been continued with the most striking zeal and perseverance to the last moment of his short life, varied according to circumstances, but never wholly abandoned.

At Bristol Dr. Beddoes first formed a connexion with the family of Mr. Edgeworth, the author of the popular work on Practical Education, whose daughter he afterwards married.

* We are bound to believe that Dr. Beddoes was far from wishing ever to inculcate "more than constitutional resistance," for he positively asserts it himself in the work before us, p. 117; that he was sincere also in "deprecating all violence," and could "shudder at the idea of *confusion*," we are likewise disposed to believe, not only from his own declarations, but from what we knew of the private temper and amiableness of the man; but undoubtedly he often spoke and often *wrote* of public men and measures, in a strain, which was, to say the least of it, liable in the nature of things to produce an irritation, which might have much exceeded the bounds he would have himself prescribed: a case by no means uncommon.

In the year 1798, the two elder sons of W. H. L. Esq. M. P. (we presume Mr. Lambton, member for Durham) were placed under the care of Dr. B. in conformity, as it would seem, with the express wish of their deceased parent, to be brought up on Dr. B.'s *own plan of education.* They continued with him four years, and the learned historian remarks, that upon this occasion "he realized very happily, in his mode of instruction, many of his former *theories* on the subject of education; and the results were highly gratifying." This is certainly as much as the editor could be expected to say, and we are not inclined to dispute it, not being ourselves in the way of appreciating the effects alluded to.

In the same year, the Pneumatic Institution was opened, which is certainly particularly memorable as an era in philosophy, if for no other reason, yet for this, that it was almost the first stage on which Mr. Davy began to exhibit his extraordinary talents. We are not unwilling, however, to assign to this Institution a credit of its own. Though apparently forgotten and done with at the present moment, we confess we feel inclined to agree with Dr. Stock, that *perhaps*, "Pneumatic medicine has fallen into premature and unmerited oblivion," p. 314. Gaseous remedies appear to us undoubtedly to be capable of considerable effects, and we see no reason why they may not by judicious methods of modification and exhibition, simple or combined, be some time or other brought to bear no inconsiderable share, in the alleviation certainly, and possibly in the perfect cure of some of the worst diseases to which mankind is liable. We judge only from the effects unquestionably and undeniably produced by their exhibition; which, however incapable at present of being reduced to certain principles, and directed to certain ends, may yet, we apprehend, in time, be better understood, and more scientifically applied.

We are much inclined also to give Dr. B. great credit for his wish to disseminate certain *principles* of medical knowledge among all classes of persons. We are confident that a just conception of the true nature of the *first symptoms* of disease, would indeed tend greatly to the lessening the amount of fatal cases, and exceedingly alleviate and abridge the sufferings of the species at large. "Preventive and prophylactic medicine,"

in short, is, in our opinion, a grand desideratum, especially among the poor, whose ignorance upon this particular point exceeds any thing that can be conceived, and is, we fear, the occasion of the loss of many children. Still, however, we are aware of the amazing difficulty of teaching those who are resolved not to learn. Quacks and empirics, and village gossips, against whom Dr. B. was particularly severe, would, we are confident, long maintain their ground against the wisest and best conducted efforts of regular practitioners. We cannot forbear extracting one of the Doctor's remarks on a certain class of persons just alluded to, namely, Village Gossips, who

"Without faculties to comprehend the laws of the human system, even if they had attempted to study them, force upon their friends some infallible recipe, for any disorder with which they may be afflicted."

The Doctor observes, that

"It is particularly worthy of remark, that the interference of these volunteer practitioners is almost uniformly confined to the medical province alone: were any one of them to produce her case of instruments, it is doubted whether even the politeness due to the sex would induce submission to any surgical operation, though it were only proposed to open a vein; and yet," adds the Doctor, "the tools of the physician are not less keen than those of the surgeon: but a simple reason will explain the difference; their operation is secret*." P. 198.

We are confident Dr. Beddoes had a just view of many real evils subsisting in the world, though perhaps he might see others in too strong a light, and concerning some, be altogether mistaken. That in regard to *all* errors and abuses, he was generally too sanguine about the practicability of their speedy removal, and too hasty in applying his remedies, and certainly by no means discreet in his mode of employing them, we most fully admit; but we are yet willing to give him credit, for projecting many things, which under other circumstances, and

* From a remark of the Doctor's, however, to be found in the appendix, it appears, that he thought quackery not upon the increase, but that "in proportion to the population of the country, medicine is now less frequently administered by unprofessional hands, than at any former period."

even in other hands, might possibly, with great advantage to the world in general, be carried into effect, and probably one time or other will be realized.

It is very melancholy, but highly instructive, to read the account of Dr. Beddoes' end. Nothing can be more calculated to repress all extravagant prospects of sublunary happiness, or that confidence which we are all too apt to place in the future events of life. With a mind as active as ever, perhaps more so than at any other period of his life, with an imagination teeming with projects and speculations, upon points the most important, happy in his family, comfortable, perhaps even affluent in his circumstances, and so little advanced in the career of life, as fairly to admit the hope of many years to come, he is suddenly arrested by the hand of death; and notwithstanding all his own skill, and the care and advice and closest attention of many eminent medical friends, hurried to the grave, and removed from a stage on which no man was calculated to act a busier part. Though himself a practitioner, he seems, as is not uncommon, to have entertained wrong notions of his malady, and probably at last fell a victim to a complaint, least suspected by himself, though not so by the friends who knew him. He judged his hepatic system to be out of order, but the complaint lay in his chest, his respiration had always been difficult, and sensibly so to his acquaintance. Dr. Beddoes died before he had completed his 49th year.

The character which Dr. Stock his given of him we have read with pleasure; we verily believe it to be just; privately we always entertained a regard and high respect for him; publicly we often differed from him, and our opinion was no less fixed and determined. We ever accounted him capable of great things, but too hurried, too sanguine, too unconscious of the lapse of time, and too little aware of the want of opportunity for any one man to accomplish any very numerous ends, either of invention or reformation. To effect all that he wished to do, he ought to have been able to calculate upon a residence here of at least a thousand years, but this being evidently impracticable, it would have been better if he had not attempted too much, but had fixed his whole thoughts, and applied all his time to some one design. It was, however, as possible to stay

the lightning, or regulate the winds as his movements; they were too rapid to take any steady direction; and he was easily turned aside from any pursuit by new objects of curiosity or inquiry.* As he was not above changing his opinions upon conviction, it appears much to be wished, that so well meaning, and so very ingenious, a man, could have lived much longer, but his premature death is among the events, which in our present state, we must not presume to fathom or understand—Providence sees not as we see.

Dr. Stock has enlivened his book by many pleasant traits of character, displayed principally in the intercourse of his friend with other eminent persons, his correspondence, and his occasional remarks.

The following account of his reception of a learned foreigner, is so perfectly characteristic of the man, that we cannot possibly omit to transcribe it; though already selected by other reviewers.

" In the year 1803, Doctor Joseph Frank, of Vienna, having visited England, for the purpose of examining into the state of our prisons, and charitable institutions for the sick, called upon Dr. Beddoes, at Clifton. The account of the interview we have from himself, and it is briefly as follows. ' All his acquaint-

* As Dr. Stock has particularly noticed this feature in his character, we shall not scruple to relate the following circumstance, to show how rapidly and *inconsiderately* he passed from one pursuit to another. In the summer of 1792, Dr. B. applied to the writer of this article, then at Oxford, to find him some young person, capable of translating French, and acquainted enough with mineralogy and chemistry, to undertake an English edition of *Dolomieu's* Travels to the *Lipari* islands. Instead of recommending any third person, the writer of this article, being perfectly at leisure, undertook the translation. Dr. B. was much pleased with the offer, undertook to spare no efforts to make it an important work; and accordingly wrote to *Dolomieu* then at *Paris*, to apprise him of the undertaking. He engaged a most ingenious German, then at Oxford, to make drawings of certain fossils; he engaged Messrs. Cadell to print the work, and take the charge of the engravings, and the whole for which he made *himself* responsible was, to *write a preface*. The event, however, really was, that though *M. Dolomieu* much espoused the work, and sent over many drawings of fossils, from the king's library at Paris; though the German draftsman copied many of them most beautifully, though Messrs. Cadell stood to their agreement, and the translation was fully completed and put into his hands, the whole came to nothing; his thoughts had taken a different turn, and he could not be induced to take a step further in the business.

ance,' says Dr. F. 'had told me beforehand, that I should find in Dr. Beddoes, a man, whose *premièr abord* was rather repulsive. On entering his house, I gave the servant my introductory letters, that his master might be somewhat prepared, and not taken by surprise. After waiting about a quarter of an hour, Dr. Beddoes appeared with several books under his arm. The first words that he addressed to me, were, 'which Dr. Frank are you? for there are a great many of you.' Before I could answer him, he laid before me, in a row, several books, all written by Franks, constantly asking as he turned them over, 'Is that you? Is that you?' The first that met my eye, was a Materia Medica, by Solomon Frank, I protested against this being mine. Then followed some of the works which I had written in elucidation of the Brunonian system. Having now recognized me, Brown became the first topic of our conversation, &c.'

In an appendix we have two curious papers, which were read by the Doctor before the Natural History society of Edinburgh, the one on the sexual system of vegetables, the other on the scale of being. In which, as Dr. Stock remarks, "he maintains the negative of both these questions with considerable ingenuity." In the latter, there is a good deal of humorous satire, very entertaining certainly, but rather unsuitable to the dignity and gravity of a Philosophical society. The following specimen will amuse the reader.

"To shew the difficulty of adjusting the claims of different beings to certain stations, it will be proper to consider a few instances. I shall suppose that man has taken his place, and that a competition arises among the other animals for the honour of standing next the Lord of creation. The ape will urge his form; the half-reasoning elephant, his superior intelligence; the beaver his mechanic arts, his dependence on the cooperating powers of many associated individuals for his well-being; and may not the pertness of the parrot produce in her favour, the power of uttering articulate sounds? nay may not the abject bradypus, which may be said rather to grow than to live, and in sagacity is lower than the insects, put in a still more powerful claim? If native helplessness, if paucity and weakness of instincts be among the characteristics of man, then will an im-

partial judge hesitate, before he dismisses this plea as inadequate; and if he, moreover, takes into consideration the circumstances of pectoral mammæ, and no very distant similitude of habit in other respects, he must either invite this seeming outcast of nature to a seat by his side, or pronounce the contest doubtful.

"It would be no less difficult to find the next link to the bradypus: for it is allied to the Pecora by the property of rumination; to the birds in having a common cloaca; to the amphibious animals, by tenacity of life, and faintness of vital actions; to the myrmecophagus, in having strong and reflected nails, and in wanting dentes incisores. From the myrmecophagus, the manis differs only in having scales, instead of which the Darypus is provided with a shell, by means of which this genus is allied to the Testudines. I mention these last marks of resemblance, merely to show what kind of a chain might be constructed if equal or stronger marks of resemblance were kept out of view. The following would be a few of the links:

Homo sapiens,
Bradypus,
Myrmecophagus,
Manis,
Darypus,
Testudo.

Whence it appears that we might get from an alderman to a turtle at five steps."

In the appendix also are some very amusing extracts from the Doctor's common-place book, which are well calculated to show the course and turn of his thoughts, and the many experiments he had in view, some of the latter, however, though connected with very important researches, will scarcely be read without a smile, such for instance, as follows:

"Memorandum.—To try *this*.—To *opiate* a number of frogs near an air-thermometer. Also to *digitalise* them. *Phosphorus*.—To eat a little; bleed; smell and try the air in the dark if luminous."

The following articles pleased us as well as any.

"*Nature*—It is a vulgar error to say such an invalid must be left to nature; the thing is nearly impossible. Nature has

no temple in which the sick can be deposited. Medicines made up at an apothecary's may be discarded, but some sustenance must be administered, and some plan of management followed, and the circumstances of these may be far from indifferent. What they call nature is all *art; art*-fed, *art*-dressed *victuals*, as artificial as medicines."

"*Names*—The force of genius preserves a writer against certain faults of taste. Shakspeare calls scarce any of his characters by adjectives, expressive of the character he means to paint, except Shallow and Slender. The vulgar author of the Pilgrim's Progress, vulgarly labels all his. It is a miserable shift to help out deficiency in dramatic drawing and colouring. It should be left to the reader to find out the proper epithet. The name and nature of different members of a family are put sadly at cross purposes. If the hypocrite hero of the School for Scandal, is to be baptized Joseph Surface, his brother ought to have stood in the *dramatis personæ*, as Charles Bottom."

We must now take our leave of Dr. Beddoes, and we do it with unfeigned regret, lamenting his early end on many accounts, but especially because we think age might have corrected some of those blemishes, or rather brilliant eccentricities in his character, which prevented his doing justice, even to his own designs, and his own powers. Had he been less impetuous, less sanguine, and more capable of fixing and concentrating his views, he might have accomplished much more good, and left the world much more benefited by his extraordinary labours, and indefatigable diligence. To the work before us is prefixed an engraving of the Doctor, by Warren, from a painting by Bird, which we think one of the happiest resemblances we ever remember to have seen.

ORIGINAL REVIEW.

An Inaugural Dissertation on Mercury, embracing its Medical History, Curative Action and Abuse in certain Diseases. By John W. Francis, A. B. Vice-president of the Medical and Surgical Society of the University of New York. New York, 1811.

Dr. Francis informs us that in this essay, he has made an attempt to exhibit a concise account of the natural and medical history of mercury; to found the theory of its curative action upon principles believed to be less liable to objection than those upon which it has been hitherto explained: and to offer some observations on the mercurial practice, now more generally employed by the physicians of this country, in the treatment of certain diseases.

The natural and medical history of mercury is very briefly treated, for the purpose of proceeding to the more immediate objects of the writer—the consideration of the curative action of the remedy and its abuse as an article of the materia medica.

The writer, nevertheless, in his natural and medical history of this powerful medicine, has displayed proofs of considerable research, and by his copious and judicious references, enables the reader to consult the sources from whence he has drawn his knowledge.

He closes this section with the notice of its introduction into extensive use in the diseases of warm climates; more particularly in the malignant fevers of the tropics, by Dr. Chisholm, and the practice subsequently adopted by the North American physicians.

He next attempts the explanation "of the curative action of mercury"—previously to which, he ingeniously controverts the opinions of Boerhaave, Hunter and Bell, respecting its modus operandi, for which we must refer our reader to the work itself. Our author's opinion would appear to be that the curative action of mercury depends upon its very general and stimulating operation in exciting the *excretories of the whole*

*system.** For he observes that the same salutary effects will not be produced when its action is not thus extensive; as when its operation is confined to the salivary glands, or when it exerts its influence on the intestinal canal alone. That its medical virtues, continues he, depend principally upon its operation on the exhalent vessels of the skin, at the same time that it operates upon the other emunctories of the body, is still further evinced by the superior benefit which is derived from certain preparations of this metal, which are known to operate almost exclusively in producing diaphoresis: as the combinations of it with the marine acid in the form of the corrosive sublimate. Proofs of a like nature, continues our author, may be drawn from the action of those remedies, which are often united with mercury for the more advantageous treatment of the venereal disease, as antimony, guiacum, sarsaparilla, opium, &c. Again, experience has uniformly shown, that if the action of mercury in causing diaphoresis, be aided by a proper regard to temperature, food and regimen, its salutary effects are greatly increased: and if its operation be prevented or suppressed by irregularities in diet or from exposure to cold, they are greatly diminished.

He thinks that inasmuch as mercury produces a quickened action of the bloodvessels, and a consequent increase of all the secretions, it may justly be considered as a most powerful alterative; and as it possesses in a special degree the property of exciting the excretory vessels of the skin, intestinal canal and kidneys, it prevents that peculiar operation from taking place upon the absorption of a specific matter into the system, which is termed by several practical writers the *assimilating process.*

The most copious and interesting section of the essay now under analysis, is that which treats " of the effects of mercury in its native state and of its abuse in certain diseases."

Our author here finds that its action upon those individuals who employ it in the various mechanical arts, or who are

* And for this opinion, he acknowledges himself indebted to his preceptor Dr. Hossack.

themselves engaged in the working of mercurial mines, is at times peculiarly deleterious.

In support of this statement, he quotes among others the celebrated names of Agricola, Fernelius, Acosta, Hildanus, Ramazini, Hoffman, Jussieu, Mead, Sauvage and Gmelin; and finds but one writer of eminence who controverts this opinion—in the indefatigable traveller Humboldt, who attributes the pernicious consequences which ensue from the working of mines of that metal, to the excessive labour the individuals engaged in this employment undergo.

Non nostrûm est tantas componere lites.

We shall only venture to observe, that the weight of the testimony adduced above, aided by the high authority of Boyle, would seem to preponderate against the simple assertion of the illustrious baron.

Dr. Francis next treats of mercury as an article of the materia medica, and observes that it contains not an article in the employment of which, there are more circumstances deserving consideration, than those connected with or attendant upon the use of mercury. This remark with nearly equal force, he finds to apply to all the various forms in which this powerful remedy is at the present day administered; and he who ventures, continues he, to depend upon the successful operation of this medicine, without a due regard to the age, sex and particular constitution of the patient; the diagnostic symptoms and stage of the disease; the previous treatment that has been pursued; climate and temperature; will not only subject himself to frequent disappointments and hazard the safety of his patient, but most deservedly become the object of severe crimination.

A general view is then offered of the action of mercury when taken into the system in considerable quantity, either by the mouth or by absorption from the surface, and he finds that it acts with peculiar force upon the stomach, inducing indigestion, loss of appetite, nausea and vomiting; the functions of the chylopoietic viscera becoming greatly disturbed, especially those of the liver; and from its very powerful effects upon the digestive organs, the whole intestinal canal soon participates

in the disorder. It exerts a no less powerful influence upon all the secretory and excretory vessels of the body; as in those of the mouth and fauces, trachea, bronchiæ and lungs; and, not unlike the preparations of antimony, paralizes the action of the minute and distant vessels, especially those of the lymphatics. From this most general operation a languor of the whole system is produced, the constitution at large becomes affected, and symptoms highly indicative of general derangement and nervous irritability ensue. These effects, however, are much more readily induced in particular individuals or habits of body than in others; and an intimate relation exists between the operation of this medicine, and the age, sex, constitution of the patient, temperature, &c.

Some of the more ordinary ill effects attendant on the frequent and indiscriminate use of mercury, are then particularly detailed, as well as the numerous disorders which it induces of the nervous system and of the intellectual functions, which the limits of this department of our work do not permit us to specify.

Dr. F. next enters upon the consideration of what he terms "the present fashionable employment of this remedy in the treatment of particular diseases." His remarks, he says, are "necessarily confined more especially to the practice of physicians of our own country."

And first of some of the diseases belonging to the class denominated febrile.

To the bold and vigorous practice adopted by the celebrated Dr. Chisholm, says our author, in the cure of the malignant or pestilential, or yellow fever, which prevailed at Grenada and at other of the West India islands, in 1793, may be attributed the present general employment of mercury in the treatment of all the various forms of intermittent, remittent and typhus fever in the United States—and to Dr. Chisholm exclusively belongs the credit of being the first who adopted the novel practice of exhibiting mercury to the great extent it is now employed in the disease first alluded to—for during the existence of the same epidemic in subsequent years, sometimes no less than 800 and at other times upwards of 1000 grains of calomel were employed. Indeed a case where mer-

cury was used to a much larger extent is related from Chisholm's Essay on the Malignant and Pestilential Fever.

Dr. F. next takes a view of the introduction of mercury in the treatment of this *epidemic*, when appearing in different parts of the United States, and briefly notices the difference of opinion that subsisted among medical men with respect to its beneficial effects in the disease.

The utility of the free employment of mercury in the treatment of the yellow fever of the United States, may be well doubted, says he, chiefly for the following reasons:

First. The climate of this country is singularly unfavourable to the salutary operation of this medicine. The frequent and uncertain transitions of the weather from heat to cold, from dryness to humidity, while they are often the cause of sudden and violent diseases, which generally assume the inflammatory character, they give the body a certain morbid predisposition that renders it unable to withstand a mercurial course, which on the nature of a more southern and temperate atmosphere would at least prove not injurious, and probably successful.

Secondly. The morbid appearances as they are exhibited upon the dissection of individuals who have died of the yellow fever in different parts of the United States, during its prevalence in different years, furnish another argument against the extensive employment of mercury in this disease. As it is universally admitted that this remedy is a powerful deobstruent, and indicated in all cases of local congestion, particularly of the glandular system; from a supposition that this part of the body was especially affected, implicit recourse was had to mercury. But while the liver appears to be the most diseased organ of those who die of yellow fever in the West Indies, this important viscus seems to be in a remarkable degree exempt from derangement in those who have died of the same disease in this country. [Exceptions, however, he acknowledges, occurred in the yellow fever of Boston in 1798.]

As our author supposes that glandular obstructions seldom take place in the yellow fever, he consequently reprobates the producing of salivation to remove an imaginary cause, and afterwards states upon the authority of Dr. Hossack and Dr.

Osborn, that even in cases where salivation was effected, a fatal termination of the disease followed. He asserts that the use of calomel in the malignant epidemic must necessarily aggravate the gastric and intestinal affections, so frequently distressing in this complaint, and quotes in proof of this assertion, the experience of Doctors Bard, Hossack, Currie, Chatard and Wheaton.

It may perhaps occur to some of our readers, that as Dr. Francis seems inclined to banish mercury from the list of remedies in yellow fever, it behoves him to suggest some preferable plan of treating the disease, and he accordingly does not hesitate to declare that what may be denominated the *sudorific* plan appears to be by far the most successful. "After the necessary evacuation from the stomach and bowels, and in some instances from the bloodvessels by the lancet, says he, the administration of those remedies which relax the surface of the body, and promote the cuticular discharge, are particularly indicated; these kept up for some time are found to be the most efficient means in the cure of yellow fever."

But Dr. F. does not consider the *abuse* of mercury as confined to the treatment of the yellow fever; but remarks that recourse is had to the same remedy frequently on improper principles for the cure of all the various forms of *intermittent* and *remittent fever* which prevail in different parts of our country, and for every variety or type of fever, from the *purest inflammatory* to the *lowest grade of typhus*. The doctor places in a striking point of view the very contradictory indications that are said to be answered by the same remedy in this plan of practice.

He concludes his Essay by treating of the exhibition of mercury in the treatment of lues venerea, and remarks, that it may well be questioned, whether the maladministration of the remedy has not produced as destructive consequences as the disease itself; quoting John Hunter's observation, "that it is nearly as dangerous in many constitutions to give mercury, where the disease is not venereal, as to omit it in those which are."

On this subject our author displays practical knowledge and extensive reading, and sets himself decidedly in opposition to

what he calls the common and most destructive error of inducing profuse salivation by throwing into the system large quantities of mercury in the cure of syphilis. When the discharge is thus excited, says Dr. F., it often continues until a total exhaustion of the strength of the patient ensues, whilst in many cases where it has been thought to have removed the disease, it has been found to produce only a temporary cessation; and in other instances it has converted a comparatively mild disorder into one infinitely more dangerous.

As he supposes that the venereal virus contaminates the system by an *assimilating process*, so the most certain and effective practice in its expulsion or cure, depends upon producing an increased discharge from *the excretory vessels of the whole system.*

To obtain this end then, mercury, as is universally acknowledged, possesses superior claims; and those preparations of it, as Dr. F. observes, which more directly act upon the secretory vessels of the surface, for the reasons before mentioned, are to be preferred. And hence the *murias hydrargyri*, or the corrosive sublimate, is recommended for these several purposes. After mentioning the distinguished names of many of its advocates, he observes, that among the principal advantages it possesses over every other preparation of the same remedy are, that, judiciously administered, it is particularly mild and safe in its operation, will admit of more extensive use in all the various forms of lues venerea, and subject the patient to fewer inconveniences; that it readily enters into the general circulation, becomes miscible with the several fluids of the body, the soonest arrests the progress of the complaint, and eliminates the morbid matter through those emunctories best calculated for that purpose; that it supersedes the necessity of salivation, by its action on all the secretions and by promoting especially the cuticular discharges, and the evacuations from the kidneys: that it is the only preparation to be depended on in those peculiar habits of body so susceptible to become salivated by every other form of mercury now in use; that in its ultimate effects upon the constitution, it is attended with comparatively no injury.

In confirmation of the valuable properties of this preparation

of mercury in the cure of syphilis, the testimonies of Dr. Locher of the Vienna hospital, of Van Swieten, and of Sir J. Pringle are quoted.

As cooperative with the murias hydrargyri, our author says that the lignum guaiaci and the radix sarsaparilla seem to claim the first notice.

This mode of treating the disease, we are informed, has been attended with the greatest success in the New York state prison, hospital, and almshouse, under the superintendence of Dr. Hossack; and in those cases in the New York hospital the external use of every preparation of mercury was omitted; instead of them the lunar caustic was occasionally used.

In the above analysis our object has been to give a plain and concise summary of a thesis which we think deserving the attention of practitioners. Notwithstanding we do not mean to be considered as embracing all the doctrines it contains, some of which, although supported with considerable ability, are in opposition to the greatest medical authorities.

MEDICAL INTELLIGENCE.

Vaccine Society.

THE Society continues its attention to the vaccination of the poor in the city and districts. Twelve hundred and seventy-seven persons have passed through the process successfully since the last notice in the Eclectic Repertory. The mode of finding out proper objects by the collectors, who call at their houses, and report them to the physicians, has been found to be at once efficient and satisfactory.

Humane Society.

IT may be useful at this period to remind our readers that the society's premiums "for the best dissertation on the means of restoring to life persons apparently dead by drowning, and more effectual than any yet in use," will be adjudged after the first day of January, 1813; until which time dissertations will be received by the secretary, Isaac Snowden, of Philadelphia.

Philadelphia Dispensary.

From December 1, 1810, to December 1, 1811, there have been three thousand, three hundred and fifteen patients under the care of the institution.

Remaining under care from last year, - -		98
Admitted since that time, - - -		3217
		3315
Of these the number cured is, - -	3013	
relieved, - - -	92	
dead, - - -	101	
removed, - - -	14	
irregular, - -	25	
remaining under care, -	70	
		3315

The receipts of moneys of the institution during the year, including last year's balance in the treasurer's hands, have been, - - - Dolls. 2947 56

The expenditures have been,	$ 2947 47	
Balance in treasurer's hands, Dec. 11, 1811,	0 09	
		2947 56

THERMOMETRICAL OBSERVATIONS.

State of the weather at Philadelphia for the last six months of 1811—the degrees of heat by the thermometer being taken at three o'clock, P. M.

JULY.

Thermometer—Lowest	. . . .	72
Highest	. . . . .	93
Mean	. . . . .	80

Winds—Northerly during the greatest heat, with clear weather from the third to the ninth of the month, both included. The remainder of the month, southerly winds.

July was hot and dry in the beginning of the month—very favourable for harvest, which was abundant and well got in: plentiful and frequent showers afterwards. Much damage to the northern and southern parts of our country by rains in this month. From the third to the ninth, many deaths in New-York and Philadelphia, from heat and from drinking cold liquors, when the body was warm.

AUGUST.

Thermometer—Lowest	. . . . .	66
Highest	. . . . .	86
Mean	. . . . .	73

Winds—Northwest and southwest, the greater part of the month; the latter part, easterly.

The month was pleasant—on the whole rather cool—very advantageous for the fruits of the earth, by occasional rains—not so much thunder and lightning this summer as usual.

SEPTEMBER.

Thermometer—Lowest	. . . . .	59
Highest	. . . . .	83
Mean	. . . . .	70

Winds—Chiefly westerly.

A moderate month on land, but severe weather on the coast. A comet was seen about the beginning of the month in the

N. N. W. It then appeared to set about a quarter past eight o'clock P. M., and at the end of the month at past nine o'clock.

OCTOBER.

Thermometer—Lowest	. . . .	43
Highest	. . . .	79
Mean	. . . .	60

Winds—Variable; more easterly and westerly than from any other point. The month was moderate. Not much rain: scarcely any frost. The comet has progressed considerably; apparently from N. W. to S. E. and by the end of the month appeared to set at ten o'clock.

NOVEMBER.

Thermometer—Lowest	. . . .	34
Highest	. . . .	56
Mean	. . . .	45

Winds—Mostly westerly.

A very moderate month. Little frost or ice. No snow. The comet appears to continue its course southeasterly.

DECEMBER.

Thermometer—Lowest	. . . .	18
Highest	. . . .	52
Mean	. . . .	36

Winds—Westerly winds prevalent.

On the 14th, snow two or three inches deep. On the 22d and 24th, snow from one to three inches deep. The navigation of the Delaware obstructed by the ice on the 21st, and continued so occasionally to the end of the month. The comet seen for the last time on the 24th, apparently taking a southwest course.

On the 16th and 17th an earthquake was felt from Georgia to Lake Erie.

Dr. Portal of Paris, has proved by numerous observations, that the signs usually admitted as distinguishing the sanguineous from the serous apoplexy, are illusory. He distinguishes apoplexies according to the causes, dependent either on the

disposition of the body, or on external circumstances; and demonstrates from his own experience, and from that of the most eminent practitioners in all ages, that bleeding holds the first rank among the remedies opposed to this formidable disease. The public may expect the appearance of this work before long.

Dr. Dumas, Dean of the Faculty of Medicine at Montpelier, having observed that a person subject to epilepsy had the paroxysms accelerated by the use of intoxicating liquors, directed them with the view of giving a periodical character to the disease, and then gave the cinchona with the happiest effect.

The French Chemists have been actively engaged in the analysis of animal and vegetable matter: at the head of the list we discover the names of Berthollet, Gay-Lussac, Thenard, and Vauquelin. Vauquelin observes that the difference between common sugar, the sugar of milk, and gum, does not merely consist in the presence or absence of azote, but in the various proportions of the other elements; to ascertain which he has commenced a series of experiments.